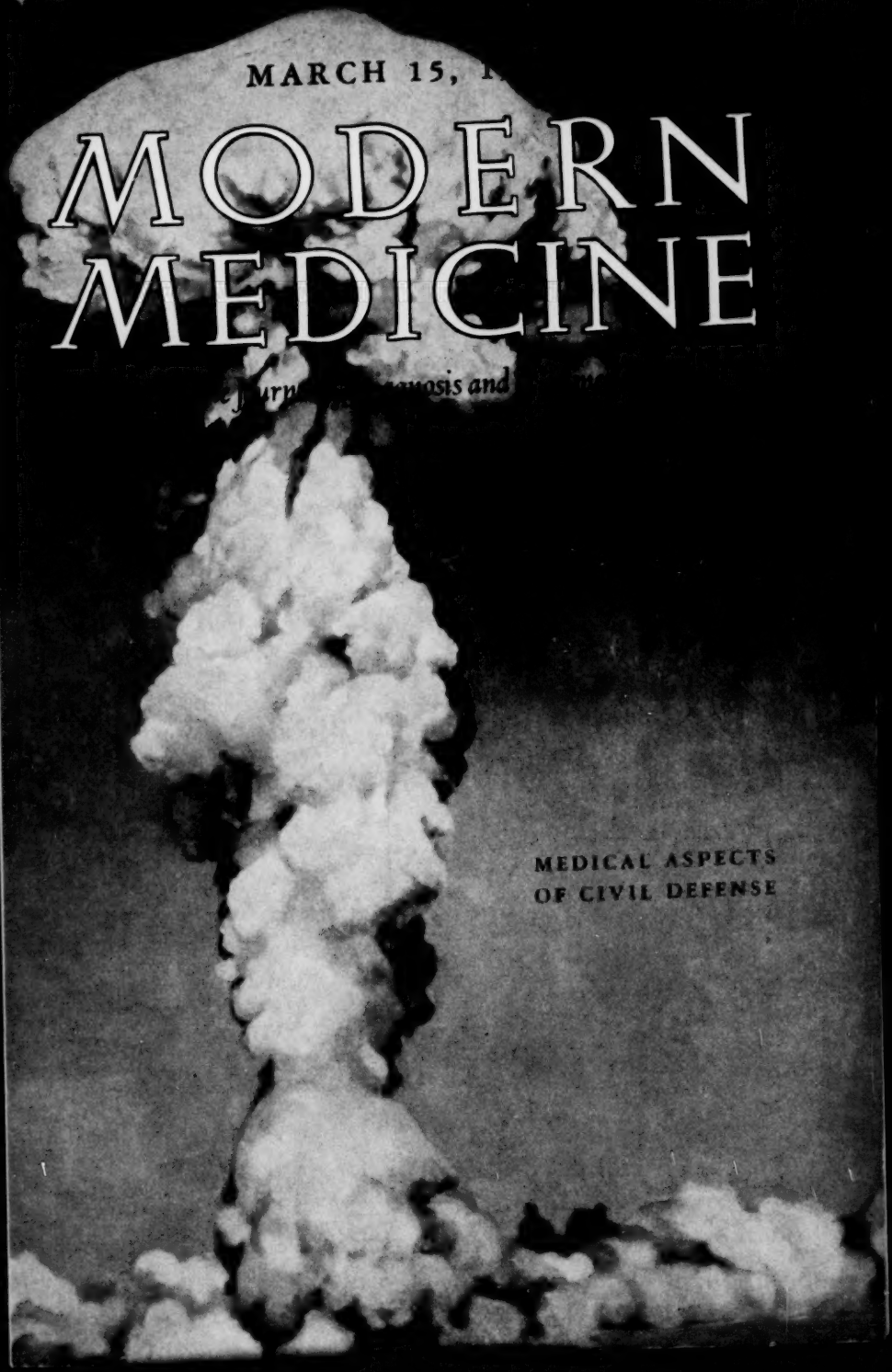
MARCH 15, 1

MODERN MEDICINE

e Journ[illegible]agnosis and [illegible]



MEDICAL ASPECTS
OF CIVIL DEFENSE

No belladonna backfire...

when you relieve nervous indigestion with .....

[redacted]

Clinical [1,2,3] and pharmacological results show that the dual action of BENTYL (musculotropic, neurotropic) provides complete and more comfortable relief than that of all other antispasmodics tested.

DOSAGE: Two capsules three times daily, before or after meals. If necessary, repeat dose at bedtime.

BENTYL ..... 10 mg.
for comfortable relief of nervous indigestion

BENTYL ..... 10 mg.
with **PHENOBARBITAL** ..... 15 mg.
when synergistic sedation is desired

1. Hock, C.W.: J. Med. Assn. Ga. 40: Jan., 1951
2. Hufford, A.R.: J. Mich. St. Med. Soc. 49:1308, 1950
3. Chamberlain, D.T.: Gastroenterology 17: Feb., 1951

Merrell
1828

Trade-mark "Bentyl" Hydrochloride

New York — CINCINNATI — Toronto

EFFECTIVE: Johnson's Baby Lotion with hexachlorophene 1% has proved itself to be a highly effective preventative and therapeutic agent for infancy's common skin afflictions: impetigo contagiosa, ammoniacal dermatitis, cradle cap, miliaria rubra.

Records of 8 leading hospitals for more than 10,000 cumulative baby days show that daily care with Johnson's Baby Lotion reduced the incidence of skin irritations of all types to an average of less than 2%.

NEW-FORMULA

JOHNSON'S BABY LOTION

Johnson & Johnson

FREE!
12 distribution samples of new Johnson's Baby Lotion. Mail this coupon.

Johnson & Johnson
Baby Products Division
Dept. F2, New Brunswick, N. J.

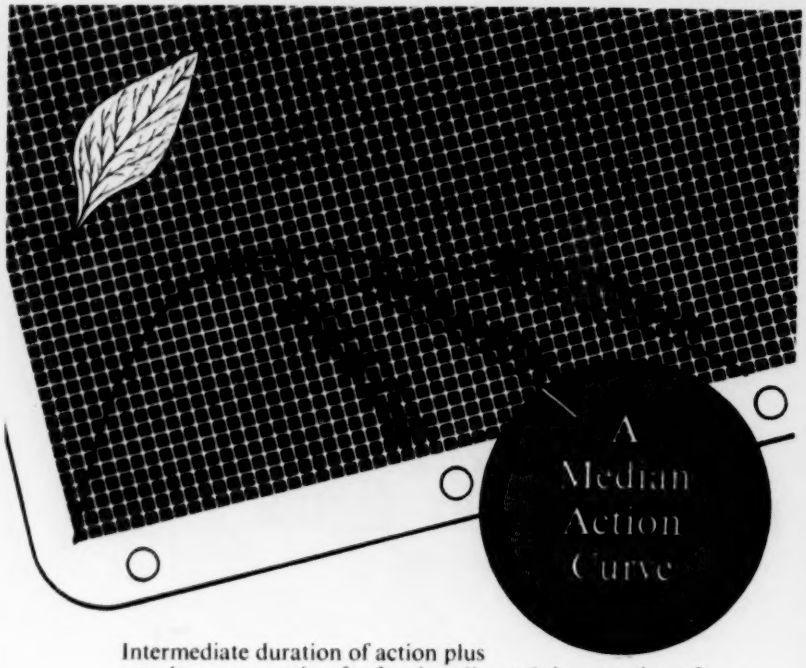
Please send me, free of charge, 12 distribution samples of Johnson's Baby Lotion.

Name_____

Street_____

City_____ State_____

Offer limited to medical profession in U.S.A.



Intermediate duration of action plus
an adequate margin of safety has directed the attention of
leading cardiologists to the glycosidal extract of Digitalis purpurea—

GITALIGIN*

(ji-tal-i-jin)

GITALIN (AMORPHOUS)
CARDIOACTIVE GLYCOSIDE OF DIGITALIS PURPUREA

The action and therapeutic scope of this preparation have been carefully studied by Batterman and co-workers, who describe Gitaligin as a "... digitalis preparation of choice for the usual treatment of the patient with congestive heart failure."**

Gitaligin is notable for uniformity in clinical potency and predictability of dosage (expressed in weight, not units). Investigational evidence indicates that Gitaligin is practically completely absorbed from the bowel.

Approximate Maintenance Dosage Equivalents—Ambulatory patients, 0.5 mg. Gitaligin approximates 0.1 Gm. digitalis leaf; 0.1 mg. digitoxin; 0.5 mg. digoxin; 1.0 mg. Lanatoside C.

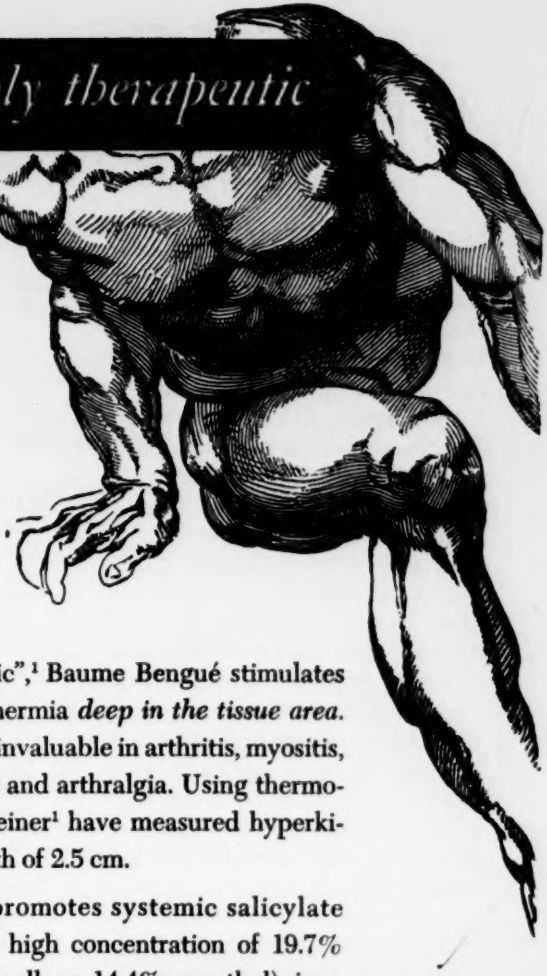
Supplied as scored tablets, each tablet providing 0.5 mg. of gitalin (amorphous) in bottles of 30 and 100.

*"Gitaligin" Brand of gitalin (amorphous) is a trademark of White Laboratories, Inc.
**Batterman, R. C.; DeGraff, A. C., et al: Studies with Gitalin (amorphous) for Treatment of Patients with Congestive Heart Failure, Federation Proc. 9:256-257 (March), 1950.

Trial supply and literature on request

WHITE LABORATORIES, INC., Pharmaceutical Manufacturers, Newark 7, N. J.

thoroughly therapeutic



As a true "hyperkinemic",[1] Baume Bengué stimulates hyperemia and hyperthermia *deep in the tissue area.* This thorough action is invaluable in arthritis, myositis, muscle sprains, bursitis and arthralgia. Using thermoneedles, Lange and Weiner[1] have measured hyperkinemic activity at a depth of 2.5 cm.

Baume Bengué also promotes systemic salicylate action. It provides the high concentration of 19.7% methyl salicylate (as well as 14.4% menthol) in a specially prepared lanolin base to foster percutaneous absorption.

1. Lange, K., and Weiner, D.: J. Invest. Dermat. 12:263 (May) 1949.

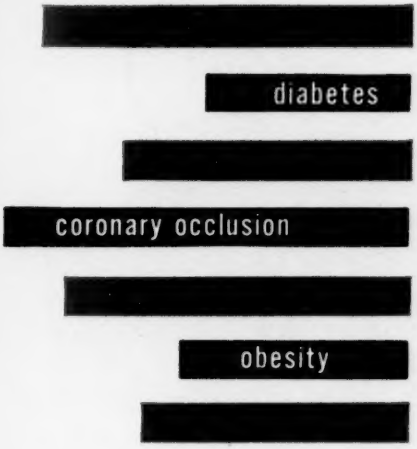
Baume Bengué

ANALGESIQUE

Thos. Leeming & Co. Inc 155 E. 44th St., New York 17, N. Y.

MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT



Hypercholesterolemia is often found in liver disease, diabetes, atherosclerosis and its associated coronary occlusion, hypertension, obesity and nephrosis.†

Accumulating evidence shows that lipotropic therapy, as available in Methischol, will help to normalize cholesterol and fat metabolism. By reducing elevated blood cholesterol levels in most patients, lipotropic therapy may "prevent or mitigate" cholesterol deposition in the intima of blood vessels. In liver disorders, lipotropic factors reduce excess fatty deposits and encourage regeneration of new liver cells.

newly improved lipotropic formula

methischol

now contains added lipotropic vitamin B_{12}

suggested daily therapeutic dose of 9 capsules or 3 tablespoonfuls provides:

Choline Dihydrogen Citrate	2.5 Gm.*
dl-Methionine	1.0 Gm.
Inositol	0.75 Gm.
Vitamin B_{12}	9 mcg.
Liver Concentrate and Desiccated Liver	0.78 Gm.**

*present in Methischol Syrup as 1.15 Gm. choline chloride
**present in Methischol Syrup as 1.2 Gm. Liver Concentrate

Supplied in bottles of 100, 250, 500 and 1000 capsules, and 16 oz. and 1 gallon syrup.

†*Write for literature and samples*

U. S. vitamin corporation
Casimir Funk Laboratories, Inc. (affiliate)
250 East 43rd St., New York 17, N. Y.

An Unusually Unresponsive Arthritis—Severely Painful, Recurrent . . . . .

Consider gouty diathesis as the cause. "Chronic gouty arthritis may be confused with osteoarthritis, post-gonorrheal rheumatoid arthritis and adult rheumatoid arthritis."[1]

Fortunately, there is a sure diagnostic test for gouty arthritis—gout should be suspected if "symptoms are *relieved* within 24 to 72 hours by adequate doses of *colchicine*."[2]

Specifically designed to meet the demands of gouty arthritis therapy—

CINBISAL 'McNeil'

TRADE MARK

—provides colchicine (0.25 mg.) for its specific effect; sodium salicylate (0.3 Gm.) to combat pain in hyperuricemia; ascorbic acid (15 mg.) to replace vitamin C lost during salicylate therapy.

***CINBISAL** is supplied in bottles of 100 and 1000 tablets. (Engestic® coated green.) Samples on request.*

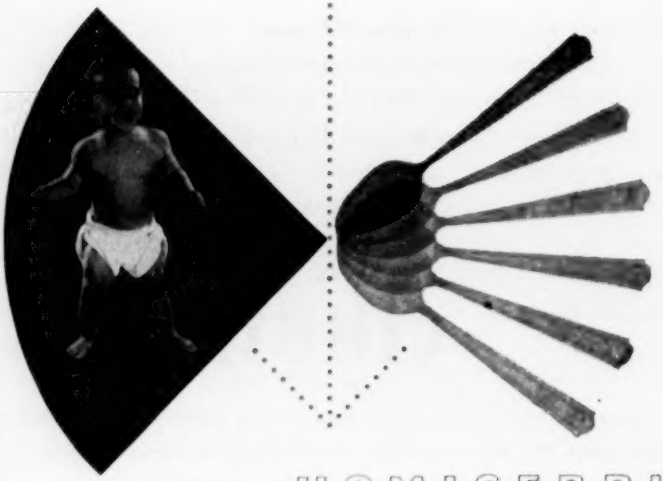
IN ACUTE CASES—medical management includes two tablets Cinbisal (equivalent to colchicine 0.5 mg. and sodium salicylate 0.6 Gm.) every hour until pain is relieved, unless gastrointestinal symptoms appear. (Eight to ten doses are usually sufficient.)

TO PREVENT RECURRING ATTACKS—one or two tablets every four hours.

McNEIL LABORATORIES, INC. Philadelphia 32, Pa.

1. Comroe, B. I.: Arthritis and Allied Conditions, Philadelphia, Lea & Febiger, 1949, p. 734.
2. Ibid, p. 735.

how to get the most out of vitamins



The natural oil globules in **HOMICEBRIN** (Homogenized Vitamins A, B_1, B_2, C, and D, Lilly), as in milk, are so finely subdivided that they are easily and completely assimilated. Such minute particles readily surrender their vitamin content to the delicate digestive tract of even the smallest infant. The essential water-soluble factors further round out this formula to give young patients full protection from vitamin deficiencies.

The new pint-size economy package reduces the cost of the daily dose in early infancy to less than two cents.

Lilly

ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U.S.A.

Complete literature on Lilly vitamin products for prescription use is available from your Lilly medical service representative or will be forwarded upon request.

TABLE *of* CONTENTS

for
March 15
1951

Modern Medicine
Vol. 19, No. 6

THE COVER portrays the radioactive cloud mass resulting from the explosion of an atomic bomb at Bikini. It is a poster for the contents of this issue which are devoted to means of meeting disaster should this country become a victim of atomic attack. Only if adequate steps are taken now in preparation and organization for catastrophe can the paralyzing effects of such an attack be ameliorated (see Dr. Norvin Kiefer's letter on page 14). Most of the material in this issue has been extracted from the government publications *The Effects of Atomic Weapons, United States Civil Defense,* and *Health Services and Special Weapons Defense.* These publications are for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Contents for March 15 1951

CONTINUED

MODERN MEDICINE, The Journal of Medical Progress, is published twice monthly on the first and fifteenth of each month at Minneapolis, Minn. Subscription rate: $5.00 a year, 25c a copy. Business Manager: M. E. Herz. Address editorial correspondence to 84 South 10th Street, Minneapolis 3, Minn. Telephone: Bridgeport 1291. ADVERTISING REPRESENTATIVES: New York 17: Lee Klemmer, George Doyle, Bernard A. Smiler, 50 East 42nd Street, Suite 401. Telephone: Murray Hill 2-8717. CHICAGO 6: Jay H. Herz, 20 North Wacker Drive, Suite 1921. Telephone: Central 6-4619. SAN FRANCISCO 4: Duncan A. Scott & Co., Mills Bldg. Telephone: Garfield 1-7950. LOS ANGELES 5: Duncan A. Scott & Co., 2978 Wilshire Blvd. Telephone: Dunkirk 8-4151.

In Treating Para-nasal Infection...

ARGYROL Provides Decongestive, Demulcent Action—No Rebound Congestion

Advantages without disadvantages

The advantages—the positive factors favoring ARGYROL—are enough to make it an overwhelming choice: a rare combination of decongestive, demulcent, detergent and bacteriostatic actions.

Lack of disadvantage—the outstanding disadvantage of rebound congestion, so typical of vasoconstrictors, is absent when the choice is ARGYROL.

The ARGYROL Technique

1. The nasal meatus . . . by 20 per cent ARGYROL installations through the nasolacrimal duct.
2. The nasal passages . . . with 10 per cent ARGYROL solution in drops.
3. The nasal cavities . . . with 10 per cent ARGYROL by nasal tamponage.

Its Three-Fold Effect

1. Decongests without irritation to the membrane and without ciliary injury.
2. Definitely bacteriostatic, yet non-toxic to tissue.
3. Stimulates secretion and cleanses, thereby enhancing Nature's own first line of defense.

Specify the Original ARGYROL Package

—the medication of choice in treating para-nasal infection.

Made only by the

A. C. BARNES COMPANY, NEW BRUNSWICK, N. J.

ARGYROL is a registered trademark, the property of A. C. Barnes Company

LETTER FROM THE EDITOR

FEDERAL CIVIL DEFENSE ADMINISTRATION
WASHINGTON 25, D. C.

February 16, 1951

Dear Reader—
I want to share this
letter with you
R.C.K.

Dr. A. E. Hedback
Editor
Modern Medicine
84 South Tenth Street
Minneapolis 3, Minnesota

Dear Dr. Hedback:

I want to express to you my gratitude and appreciation for devoting your March 15 issue to a review of "United States Civil Defense: Health Services and Special Weapons Defense".

We believe that our publication furnishes adequate basic principles, as well as many detailed recommendations, for the organization of State and municipal civil defense health services and special weapons defense. Physicians in active practice - your readers - and their colleagues in other health and related professions must be fully informed of the potential dangers that we face and must learn every means of meeting them effectively.

In a national emergency, it is on these people that the major burden of providing health services and special weapons defense would fall. If they are not prepared to assume this burden, this responsibility, then no amount of planning by official agencies, no sums of money could succeed in producing an effective civil defense program. I hope that your readers will carefully study the material you have excerpted from our official publication and that, individually or through their professional organizations, they will offer their services to their official civil defense agencies.

We can no longer take for granted our existence as a free nation. Every one of us must sacrifice for it, work for it, fight for it.

Thank you again for your interest in this extremely important phase of our national security.

Sincerely yours,

Norvin C. Kiefer

Norvin C. Kiefer, M.D.
Director, Health Services and
Special Weapons Defense Division

"Infants have a particular claim to oral penicillin since they . . . should be spared the pain and disturbance of injections."

Editorial, Brit. M. J. 2:962, 1947

'ESKACILLIN 100', containing 100,000 units of penicillin per teaspoonful (5 cc.), and 'ESKACILLIN 50', containing 50,000 units of penicillin per teaspoonful—are the ideal penicillin preparations for infants and children because they can be given by mouth . . . and are so pleasant-tasting.

Among the many indications for ESKACILLIN are:

Acute sinusitis	**Pneumonia**
Bronchitis	**Cellulitis**
Tonsillitis	**Gonorrhea**
Otitis media	**Certain skin infections**

Eskacillin 100
Eskacillin 50

the unusually palatable liquid penicillins for oral use

'Eskacillin' T.M. Reg. U.S. Pat. Off.

Smith, Kline & French Laboratories • Philadelphia

NATURAL CORRECTIVE

RESTORE NORMAL COLONIC RHYTHM WITHOUT CATHARSIS

NEO-CULTOL provides a natural, physiologic corrective for patients troubled with chronic constipation not due to an organic process. It acts gently, restoring the normal intestinal flora, counteracting intestinal putrefaction, and establishing normal colonic function.

NEO-CULTOL does not depend upon cathartic action. It supplies a viable implant of *Lactobacillus acidophilus* in a highly refined, tasteless mineral oil jelly, providing gentle lubrication without griping, flatulence, or diarrheic movements.

FEATURES: • Pleasantly chocolate flavored, ensuring palatability • Melting point adjusted to prevent leakage • Non-habit-forming.

DOSAGE: Adults — 1 or 2 teaspoonfuls. Children — 1 teaspoonful.

IMPORTANT: To be taken only at bedtime.

THE ARLINGTON CHEMICAL COMPANY

YONKERS 1, NEW YORK

Correspondence

Communications from the readers of MODERN MEDICINE *are always welcome. Address communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Palindromic Rheumatism

TO THE EDITORS: I was most interested in your Diagnostix column in the December 1 issue of *Modern Medicine* (p. 93).

I have been an unwilling exhibit of palindromic rheumatism for many years. I am wondering what source was used for the symptom picture presented in the Diagnostix, since all attacks which I have had last from two to four days and I find it hard to believe that an attack would both arise and disappear within an hour.

I am also interested in any further information you can send me regarding the etiology or treatment of this condition.

JESSE E. SCHMICK, M.D.

Orange, N.J.

¶Diagnostix Case MM-180 on palindromic rheumatism was adapted from case reports included in the following articles:

Philip S. Hench and E. F. Rosenberg, *Arch. Int. Med.* 73:293-313, 1944, and *Proc. Staff Meet., Mayo Clin.* 16:808-815, 1941.

J. G. Grego and H. N. Harkins, *J. Michigan M. Soc.* 430:401, 1944.

J. C. Cain, *J.A.M.A.* 125:1037-1038, 1944.

These reports included cases in which attacks varied in length from thirty minutes to several days.—Ed.

"I hate to be such a bother, but will you please read me my latest letter from my doctor."

Artificial Respiration

TO THE EDITORS: I would like to comment on the interesting article concerning the efficacy of artificial respiration by Drs. Erling Asmussen and Marius Nielsen which appeared in the January 15, 1951 issue of *Modern Medicine* (p. 72).

The problem of determining the

(Continued on page 24)

a report of a revolutionary new development

in the management of congestive heart failure

Smith, Kline & French Laboratories presents:

RESODEC

Trademark

for sodium control

'Resodec' simplifies and ensures salt restriction by removing sodium—not from the dinner plate, but from the contents of the intestinal tract.

Why sodium restriction is so important in congestive heart failure

An outstanding characteristic of the patient with congestive heart failure is that he retains excessive amounts of sodium. And, to the extent that he retains excess sodium, he will accumulate excess fluid. Ten grams of salt retained will produce the accumulation of about a quart of water.

Now, the physician is entirely familiar with the complications caused by this excess fluid, which manifests itself as edema. Greater demands are made on an already failing heart. The renal blood flow and glomerular filtration rate decrease . . . causing an increased degree of sodium retention. This, in turn, leads to even more fluid accumulation and a renewal of the morbid cycle.

This is why it is vitally important (1) to restrict sodium, and thus (2) to prevent or arrest the retention of excess water.

The "low-salt" diet has always been difficult

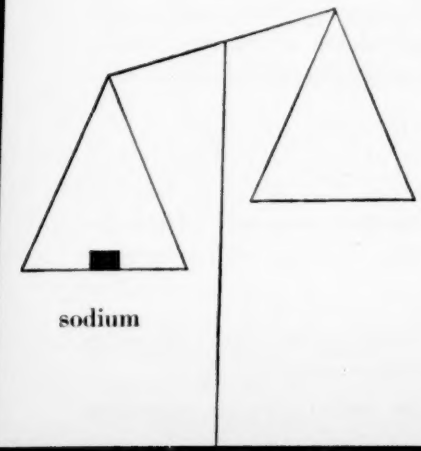
The "low-salt" diet has been advocated by leading specialists in congestive heart failure—primarily because, until recently, it has been the only direct method for the control of sodium.

The difficulties of this regimen, however, are many. The diet is almost intolerable, requires the preparation and expense of separate meals, and prevents the patient from dining out. **Finally, even after undergoing this ordeal, few patients actually attain the low sodium level that the regimen is intended to achieve.**

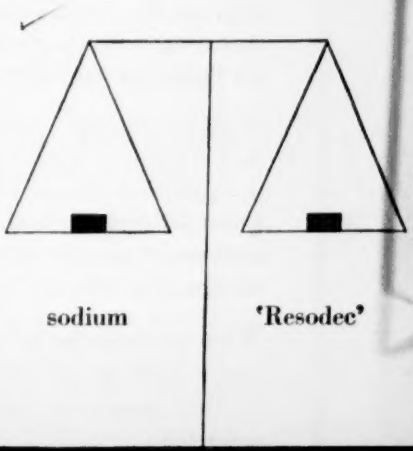
Resodec removes sodium . . .

At last—in Resodec—S.K.F. Laboratories has developed a new therapy which gives the physician a positive means of achieving sodium control—with virtually no danger of sodium depletion. This remarkable substance has the ability to remove excess sodium from the contents of the intestinal tract and to carry it out of the body in the feces. This removal of sodium permits the kidneys to excrete the excess fluid. Thus, the edema is controlled, the weight declines and the load on the heart is markedly reduced.

Resodec does not produce any significant physiological change whatsoever, except for the removal of excess sodium.



Sodium imbalance causes edema



'Resodec' restores sodium balance

RESODEC RESODEC RESODEC RESODEC RESODEC RESODEC

. . . without the danger of potassium depletion

Moreover—and this is highly important—Resodec does not interfere with the normal metabolism of potassium. Its prolonged use does not endanger electrolyte balance.

Resodec Offers the Patient and Physician 2 Outstanding Advantages:

1. Resodec assures **adequate** sodium control.
2. Resodec frequently allows greater dietary freedom,
   . . . thus encouraging patient cooperation
   . . . and lessening the danger of protein deficiency.

How Resodec Is Synthesized

Resodec is one of a class of substances known as cation exchange resins. The class of resins to which Resodec belongs is entirely distinct from the "anion exchange resins". These latter, which attract negatively charged ions (anions), have found a completely different medical use, i.e., in the treatment of peptic ulcer. In the synthesis of Resodec, two important constituents are added to each 15 Gm. (single dose) of the basic resin: (1) Potassium ions (20 mEq.), and (2) Ammonium ions.

Why potassium is added to the resin. Potassium is the only element—other than sodium, of course—that is removed in significant amounts by the resin. The potassium ions are added to the resin to compensate for the potassium that Resodec removes. Thus, the possibility that Resodec will produce potassium depletion is eliminated.

Why ammonium is added to the resin. The ammonium that is added to the resin serves two purposes:

1. The ammonium form of the resin provides maximum palatability.

2. The ammonium ions—when they are released—combine with chloride ions to form ammonium chloride, a mild diuretic.

What Resodec is

Resodec is a virtually inert and completely non-absorbable substance. It is a refined, white, easily pouring powder—odorless, tasteless, and of a pleasant consistency.

With Resodec there is no evidence of toxicity

Acute and chronic toxicity studies on Resodec have been negative.

Studies of stools of Resodec-fed animals showed that Resodec does not interfere with the absorption of essential nutrients and minerals. Hemoglobin, red blood count, hematocrit and white cell count were entirely normal.

How Resodec Works

The basic action of Resodec can be most simply explained as two separate chemical exchanges:

1. In the acid medium of the stomach, Resodec releases the potassium and ammonium ions that have been bound to it.

The potassium ions compensate for the potassium that the resin will remove when it reaches the intestinal tract. The ammonium ions combine with chloride ions to form ammonium chloride, a mild diuretic.

In exchange for the potassium and ammonium ions which have been released, the resin takes on some hydrogen ions.

2. In the alkaline medium of the lower small intestine, a second exchange occurs. The resin attracts and binds to itself sodium ions (and also some potassium ions). In exchange for these sodium ions, the resin releases the hydrogen ions that it picked up in the stomach.

The sodium that is bound by the resin is "carried" out of the body in the feces.

In short, Resodec removes excess sodium without producing any other significant physiological change. Therefore, the net result is a low sodium effect.

The chronic toxicity studies are of special interest because Resodec is, in most cases, a long term medication. These chronic toxicity studies—where Resodec was used in animals over a long period of time—showed no pathology suggestive of toxicity.

Indications

Resodec is indicated wherever a "salt-free" or low salt diet is required in the management of congestive heart failure and cirrhosis.

Contraindications

The use of Resodec should be limited to the indications listed above. Its use is contraindicated in the presence of definite renal insufficiency, glomerulonephritis, oliguria and anuria.

Therapeutic effect

In the majority of cases, if the patient uses Resodec as directed, omits table salt, and eliminates excessively salty foods such as bacon—

(1) his edema will be controlled,
(2) his weight will decline,
(3) and the load on his heart will be markedly reduced.

Quantitatively, Resodec produces the approximate effect of halving the patient's salt intake. The following figures provide a general guide:

Salt intake (per day)	Resodec initially will remove
7-12 Gm. (mild case—normal diet)	3-4 Gm.
3-6 Gm. (moderate case—moderate restriction)	1½-3 Gm. (50%)
1-2 Gm. (severe case—drastic restriction)	1 Gm., or less

Dosage and Administration

The daily dosage of Resodec is 1 packet (15 Gm.) three times daily, at mealtime. The therapeutic effect should be regulated by varying the dietary intake of sodium—**not** the dosage of

Resodec. The proper degree of dietary restriction may be determined by observing the response of the patient, just as with the "salt-free" diet. (See **Diet** section, below.)

Resodec may be taken with fruit juice, milk or water, or in any other way that is convenient for the patient. Because individual tastes vary so widely, it is desirable to encourage the patient to experiment with different ways of taking Resodec.

Diuretics

Obviously, in the markedly edematous patient, even with Resodec therapy, mercurials or other diuretics are sometimes required to hasten the return to normal fluid balance.

As the edema disappears, however, Resodec becomes the major therapy. It helps **maintain** the normal fluid balance by removing sodium—just as the "low-salt" diet is intended to do. In all but the most severe cases, use of Resodec should eventually diminish the need for diuretics.

Diet

In most cases, Resodec does not eliminate the necessity for some dietary restriction of salt.

The majority of patients using Resodec, however, will be satisfactorily maintained on normal household cooking if they merely eliminate salt at the table and omit excessively salty foods such as bacon.

In more advanced cases, additional dietary restriction of sodium will probably be required, i.e., (1) no salt added in cooking and (2) careful selection of low sodium foods.

The precise degree of dietary restriction required with Resodec may be determined by observing the response of each patient—just as with the "salt-free" diet. **But—whatever the degree of dietary restriction—it will be far more therapeutically effective in conjunction with Resodec therapy.**

How to write for Resodec

When prescribing Resodec, be sure to write for **1 carton.** Each carton contains one week's supply—21 single dose (15 Gm.) packets. **Complete directions for administration appear on each packet.**

relative efficiency of different methods of artificial respiration depends on many factors. These vary under different conditions. One factor is the resistance and muscle tone of the subject.

In an effort to accumulate data on this problem, Dr. Archer S. Gordon studied various methods of artificial respiration on corpses approximately one hour after death and

A Comparsion of
RESUSCITATION METHODS
will appear in the April 1 issue of
MODERN MEDICINE

on volunteers who attained a state of suspended respiration after hyperventilation (Archer S. Gordon, D. C. Fainer, and A. C. Ivy *J.A.M.A.* 144:1455-1464, 1950). Under Dr. Max Sadove, we studied respiratory exchange on completely apneic, anesthetized, and partially curarized volunteers (Archer S. Gordon, F. Raymon, Max Sadove, and A. C. Ivy *J.A.M.A.* 144:1447-1452, 1950). Here we used the endotracheal technic.

The results are compared in the table. The high efficiency of the Holger Nielsen method of artificial respiration is confirmed by these experimental data.

LLOYD A. GITTELSON, M.D.
Chicago

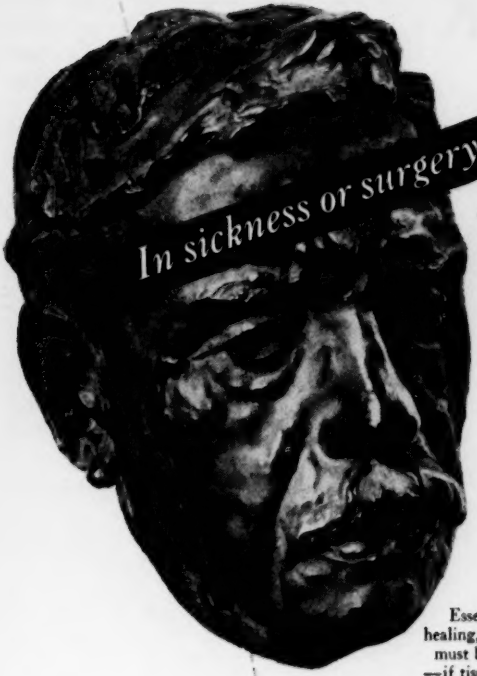
Psychiatry for Tuberculosis

TO THE EDITORS: May I congratulate you on your presentation of Diagnostix Case MM-183 in your issue of January 15, 1951 (p. 144).

The problem of emotional disturbance and the course and prognosis of pulmonary tuberculosis has been so underplayed that I am sure that inclusion of this case will prove of real value in making physicians everywhere more aware of this relationship. In a hospital such as ours, where psychiatric social workers, a consulting psychiatrist, and a psychologically oriented staff are con-

RESPIRATORY EXCHANGE IN CUBIC CENTIMETERS

	Method of Artificial Respiration		
	Schafer *(prone pressure)*	Eve *(tilt table)*	Holger Nielsen *(armlift, scap. pres.)*
Nielsen: quiet subject; quietly breathing 11 subjects	180	540	450
Gordon: warm corpse; endotracheal airway 26 subjects	185	225	580
Gordon: suspended respiration after hyperventilation 9 subjects	1,000	950	1,990
Sadove: apneic, anesthetized, partially curarized subject; endotracheal airway 11 subjects	810	1,100	1,370



In sickness or surgery, play safer with . . .

"Saturation Dosage"

of vitamins b *and* c

Depletion of the critical water-soluble B complex and C vitamins occurs so commonly in the presence of physical pathology, as to make a presumption of nutritive impairment[2] almost axiomatic. Essential to normal cell metabolism and wound healing, these poorly-stored, readily-diffusible factors must be replenished — usually by *massive dosage* —if tissue rehabilitation[3] and return to health[4] are to be expedited. • Allbee with C 'Robins' provides this all-important "saturation dosage" in convenient capsule form. It incorporates the important B factors in 2 to 15 times daily requirements, plus 250 mg. of vitamin C — *the highest strength of ascorbic acid available today in a multi-vitamin capsule.* • Its prescription represents a sound contribution toward decisive recovery from disease, or toward pre- and post-operative nutritional support.[1]

A. H. ROBINS CO., INC. • RICHMOND 20, VA.
Ethical Pharmaceuticals of Merit since 1878

FORMULA: *Each Allbee with C capsule contains:*

Thiamine hydrochloride (B_1)	15 mg.
Riboflavin (B_2)	10 mg.
Nicotinamide	50 mg.
Calcium pantothenate	10 mg.
Ascorbic acid (C)	250 mg.

REFERENCES: 1. Coller, F. A. and DeWeese, M. S.: Preoperative and Postoperative Care, J.A.M.A., 141:641, 1949. 2. Jolliffe, N. and Smith, J. J.: Med. Clin. North America, 27:567, 1943. 3. Kruse, H. D.: Proc. Conf. Convalescent Care, New York Acad. Med., 1940.
4. Spies, T. D.: Med. Clin. North America, 27:273, 1943.

allbee® WITH C

Robins

stantly faced with and participate in the handling of such problems, there is constant accusation by other men in the field that we exaggerate the importance of this work.

My only criticism of your presentation is, perhaps, the oversimplification and the ease with which your visiting physician and consultant psychiatrist were able to unravel the problem. May I say that the process is usually much more complex and requires considerable awareness of the influence of emotional factors in tuberculosis as well as judgment in handling. I do feel, however, that the very oversimplification may have its own dramatic quality.

Again, thanks for doing the kind of a job that you are.

ALLAN HURST, M.D.

Denver

EFEDRON

THE ORIGINAL WATER SOLUBLE EPHEDRINE NASAL JELLY

THE MOST

* Consi

FAST ACTION

ECONOMICAL TOO

TRY . . . . RECOM

NOW-

SEAMLESS WHITE LATEX

SURGEONS GLOVES ARE

1. Banded

2. "Kolor-Sized"* TRADEMARK

FOR YOUR CONVENIENCE

*Pat. Pending

● Doctors, nurses and hospitals have been enthusiastic in their praise of Seamless Brown Milled *"Kolor-sized"* Gloves. Now, because so many asked for it, we have "Kolor-sized" and *banded* popular Seamless SR 828 *White Latex* Surgeons Gloves!

In addition, you get remarkable tactile sensitivity, "easy chair" comfort and long-lasting tensile strength that means money-saving economy.

For earliest delivery please order now through your Hospital Supply Dealer. Specify: Seamless White Latex "Kolor-sized" Surgeons Gloves.

COLOR BANDED BY SIZE →

Blue 6½ Gray 7 Black 7½ Green 8

Yellow—Other Sizes*

(*) Which individually account for only 1% of total glove purchases. Size stamping continues on both front and back of all gloves.

SURGICAL RUBBER DIVISION

THE SEAMLESS RUBBER COMPANY

NEW HAVEN 3, CONN., U. S. A.

SR SEAMLESS

Ball for Enuresis

TO THE EDITORS: Regarding the letter from Dr. C. O. Thienhaus (Jan. 1, 1951, p. 18) as to treating enuresis by using a book fastened with towels to the back, a book is hard to handle and will not stay put. I have always used a ball and a woman's stocking. Put the ball in the stocking, halfway down, and tie a knot including the ball; it will not move up or down the stocking. Then just tie the stocking around the child's waist with the ball in back. This is much more efficient than a book and much less trouble.

S. K. HALL, M.D.

Pittsburgh

Long and Short of It

TO THE EDITORS: Your journal, like a woman's skirt, is short enough to be interesting but long enough to cover the subject.

A. M. WASHBURN, M.D.

Little Rock, Ark.

"Just wipe his nose, Mrs. Whinney, just wipe his nose."

ducing

without oil

—presents methylcellulose as a gel, with magnesium hydroxide in less than laxative dosage to maintain hydration of the gel by osmosis.

Each tablespoonful contains:

METHYLCELLULOSE	0.3 GM.
MAGNESIUM HYDROXIDE	0.6 GM.

The Turicum formula assures:

- lubricous bulk to encourage normal evacuation
- good distribution throughout the bowel
- no bloating
- no danger of impaction
- no interference with utilization of oil-soluble vitamins
- no danger of lipid pneumonia
- no leakage

TURICUM IS AVAILABLE IN ONE PINT BOTTLES

Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

QUESTION: Is carbonic acid safe for drinking after passing through lead pipes?

M.D., New York

ANSWER: *By Consultant in Clinical Pathology.* The carbonic acid would increase the acidity of the water and thus augment the corrosive action on the lead. Conceivably, the increased acidity might dissolve lead oxide coating the interior of the pipe. The chemist and water engineer of the Minnesota State Board of Health believe that such water would be unsafe for drinking.

QUESTION: A woman who had swallowed a toothpick came into my office with a large abscess of the lower abdomen. On incising the abscess a large amount of purulent material exuded and also a toothpick. Is it possible that this toothpick penetrated the intestinal wall and caused the abscess?

M.D., Texas

ANSWER: *By Consultant in Surgery.* Any sharp pointed object may penetrate the intestinal wall and thereby produce peritonitis which may become localized and form an intraabdominal abscess. There have been several reports in the literature of sharp pointed objects, such as toothpicks, pins, and fish bones, producing abscesses.

QUESTION: A 20-year-old woman, married eight months, complains of pain in the lower left quadrant during coitus. The condition has existed from the first day of marriage. She is also subject to menorrhagia which lasts six or seven days. Her age at menarche was 15. Two months ago a right ovary was removed because of a cystic condition, and 2 small cysts on the left ovary were punctured and drained. What can be done for this patient?

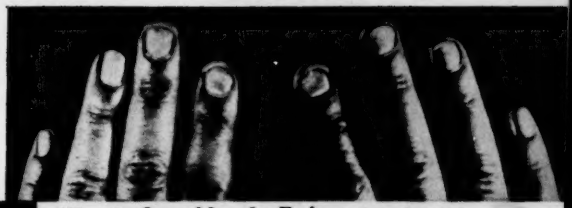
M.D., Ohio

ANSWER: *By Consultant in Gynecology.* Careful pelvic examination should elicit pain similar to that caused by coitus. If the pain is left ovarian in origin, the left ovary is probably prolapsed in the cul-de-sac, impinging on the upper vaginal space. If the uterus is retroverted, an attempt should be made to restore its position and a pessary inserted. The ovary will then be carried upward and the pain relieved. Occasionally, a prolapsed ovary can be pushed up without lifting the uterus.

If the pain cannot be duplicated by pelvic examination, a psychic source is likely.

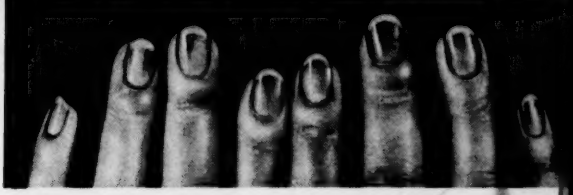
Menorrhagia is sometimes associated with cystic ovaries because of disturbance of hormone secretion. If the condition is recent in origin, a diagnostic curettage should be done.

here's help for FRAGILE FINGER NAILS!



(Top) Case No. 1: Before treatment

(Bottom) Same case following treatment



A preliminary report of a recent clinical study[1] on 12 patients complaining of soft, peeling, easily broken finger nails, confirms the value of gelatine in treatment of such conditions. The cases involved were of 1 to 15 years' duration, unyielding to various forms of local therapy.

Each patient was given 7 gms. (1 envelope) of Knox Gelatine daily, dissolved in water or fruit juice. Completely normal appearance of nails in ten cases, is reported in 13 weeks.

Knox Gelatine U.S.P. is 85% pure protein. Easily taken. Easily digested. Most economical. A valuable dietary aid in many conditions.

Available at grocery stores in convenient 4-envelope and 32-envelope economy size packages.

THE EFFECT OF GELATINE ON FRAGILE FINGER NAILS, a brochure indicating the ever-expanding usefulness of Knox Gelatine in certain dietary deficiency conditions is yours free on request. Write KNOX GELATINE, Dept. X, Johnstown, N. Y.

1. Tyson, T.L., M.D.; *J1. Inves. Derm.*; 14. No. 5 May 1950.

KNOX
Gelatine U.S.P.

Constitutional disease should be considered. If menorrhagia is found to be functional and not benefited by curettage, hormonal therapy may be employed. The hemostatic effect of large doses of estrogen during the first few days of menses is usually helpful.

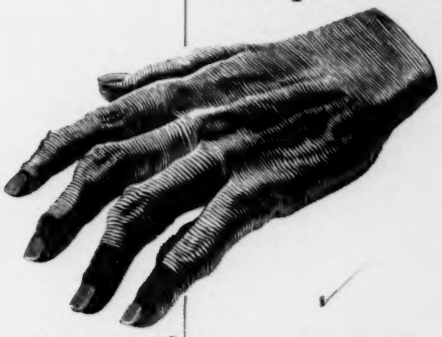
QUESTION: A slightly undernourished, mentally well-developed girl has had her first period at the age of 8 years. She has no pubic hair, no hair in the armpit. She has had one attack of rheumatic fever, and the liver is palpable. What are the possible causes of precocious menstruation?

M.D., New York

ANSWER: *By Consultant in Gynecology.* Precocious menstruation may be constitutional in origin and is then associated with precocious puberty and advanced bone development, but no other detectable pathology. A variety of cerebral lesions, including chronic hydrocephalus, tumors, and sequelae of encephalitis, may produce a similar picture. Vaginal bleeding without other signs of puberty in a young child should lead first to the suspicion of a foreign body in the vagina or to pelvic disease, such as tumor or infection. Vaginal examination with an infant speculum or urethroscope should be performed, with anesthesia if necessary. The presence of a pelvic mass may indicate granulosa cell tumor or teratoma of the ovary, either of which may cause vaginal bleeding, usually with other signs of precocious puberty. Adrenal cortical tumor or hyperplasia rarely produces vaginal bleeding, although other signs of puberty occur. Hypernephroma never instigates bleeding since no estrogenic hormone is secreted.

in rheumatoid arthritis

effective
safe
inexpensive



The adrenal cortex plays an important role in rheumatoid arthritis. Recent studies have shown a close relationship between sulfur metabolism and adrenal cortical activity. This offers a scientific explanation for the consistently good clinical results which have followed the administration of **Sulphocol Sol.**

Sulphocol® Sol

MULFORD COLLOID LABORATORIES

Solution of Colloidal Sulfur Compound
for intramuscular administration

Sulphocol Sol: *25 cc. multiple-dose vials; 12 and 100—2 cc. vials.*

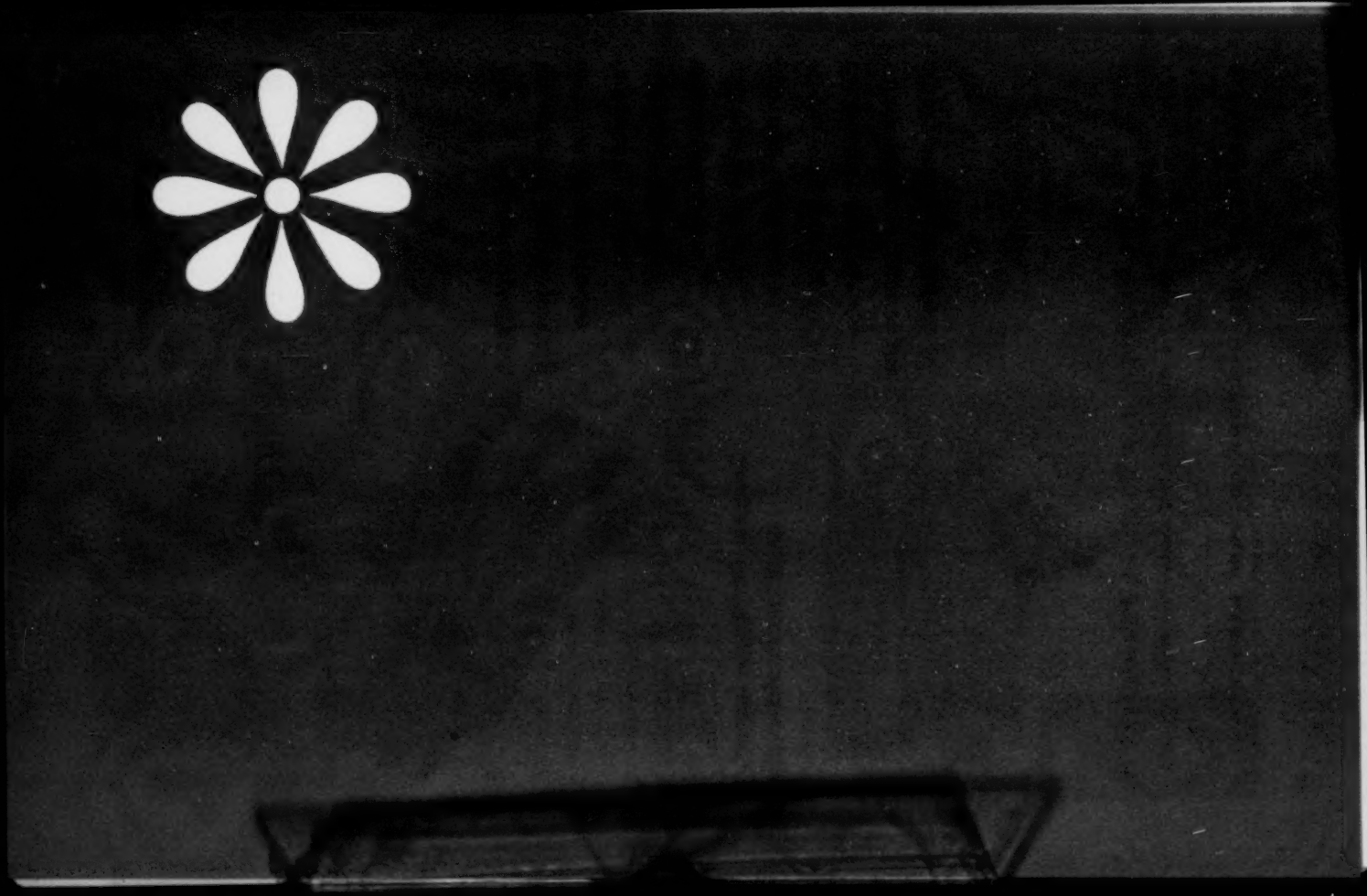
Dose: *0.25 to 0.5 cc. intramuscularly at 3 to 7 day intervals, gradually increased to 3 cc.*

WRITE FOR LITERATURE

The National Drug Company, Philadelphia 44, Pa.

More Than Half a Century of Service to the Medical Profession

A PRODUCT OF THE MULFORD COLLOID LABORATORIES



for the pain that *wasn't* there following Pabalate therapy in arthritis.

Para-aminobenzoic acid 0.3 Gm. (5 gr.), plus sodium salicylate 0.3 Gm. (5 gr.) provide *higher* salicylate blood levels on *lower* salicylate dosage — with *more prolonged* clinical relief, and *reduced* side-effects.

P

Forensic Medicine

ARTHUR L. H. STREET, LL.B.

Prepared especially for Modern Medicine

PROBLEM: An injured passenger settled a claim against a taxicab company on the faith of his own doctor's opinion that the ulnar nerve of his right arm would completely regenerate, leaving no permanent disability. However, the injury was allegedly permanent. Could the patient maintain suit against the company to set aside the release and recover damages from the doctor?

COURT'S ANSWER: No.

The Texas Court of Civil Appeals, El Paso, said that there was no evidence to show fraudulent conduct toward the patient, either by the doctor or the company, and that the release could not be set aside, being based on a settlement that had been induced by claimant's own doctor (232 S. W. 2d 871).

PROBLEM: During removal of an anal fistula at a hospital, the anesthetized patient was burned by an electric plate beneath him. The plate had been placed by a hospital nurse under the patient to operate the electrocautery knife used by the surgeon. For the purposes of liability for the nurse's negligence, if any, was she to be deemed under the control of the hospital?

COURT'S ANSWER: No.

Suit against the surgeon and the hospital had been dismissed as to the surgeon for want of showing that he was negligent. On appeal by the hospital from a judgment against it, the Appellate Division of the New York Supreme Court set the judgment aside on the ground that a hospital, whether charitable or conducted for profit, is not liable for injuries to a patient caused by the neglect of a nurse supplied by the hospital to treat a patient under the patient's doctor's orders relating to medical care and attention (101 N.Y. Supp. 2d 385).

PROBLEM: Could a charge of malpractice in roentgen treatment of warts, from alleged overexposure in time, frequency, and angulation, be sustained in a damage suit without expert testimony condemning the method used by defendant?

COURT'S ANSWER: No.

The Michigan Supreme Court upheld a trial judge's ruling that plaintiff failed to prove the defendant's neglect. The court said that neglect could not be inferred from a layman's testimony as to the condition of the flesh around the affected parts. The court said that, although laymen generally know that x-rays may cause burns, it was shown by an expert witness that x-ray treatment for warts involves skill, judgment, and practice beyond the knowledge of laymen.

The court concluded that although

(Continued on page 42)

for keeping cardiacs edema-free

Effective and well tolerated, Tablets MERCUHYDRIN with Ascorbic Acid are unexcelled for diuretic maintenance therapy.

Continuous administration of one or two Tablets MERCUHYDRIN with Ascorbic Acid daily—plus an occasional injection of MERCUHYDRIN Sodium—keep the average cardiac free of edema.

Because "maximum absorption occurs relatively high in the gastrointestinal tract (stomach and duodenum)"* Tablets MERCUHYDRIN with Ascorbic Acid are simple sugar-coated. Unlike poorly tolerated oral mercurials—which require enteric coating—clinical experience has shown that these sugar-coated tablets produce dependable diuresis with minimal side effects.

tablets

MERCUHYDRIN®

(brand of meralluride)

with ascorbic acid

the simplest method of outpatient maintenance

To secure the greatest efficacy and *all* the advantages of Tablets MERCUHYDRIN with Ascorbic Acid, a three-week initial supply should be prescribed . . . 25 to 50 tablets. Available in bottles of 100 simple sugar-coated tablets each containing meralluride 60 mg. (equivalent to 19.5 mg. of mercury) and ascorbic acid 100 mg.

*Overman, W. J.; Gordon, W. H., and Burch, G. E.: Tracer Studies of the Urinary Excretion of Radioactive Mercury following Administration of a Mercurial Diuretic, Circulation *1*:496, 1950.

Lakeside Laboratories, INC., MILWAUKEE 1, WISCONSIN

Curity PRODUCTS

BAUER & BLACK

Now–for new convenience–
Dressings in special office packages

Curity PRODUCTS

BAUER & BLACK

Curity "DOCTOR-PACKS" offer easy removal of contents as well as easy storage in office cabinets

Here are basic-dressing packages especially designed for office use. *Curity* "DOCTOR-PACKS" are big enough to contain adequate supplies, yet small enough to fit into office drawers. They're made so it's easy to take out their contents as needed. And they cost less than the same dressings in retail *Curity* packages.

Discover for yourself the convenience of "DOCTOR-PACKS," with these great dressings:

Elastic Handi-Tapes—100 elastic adhesive bandages in 2-way dispensers.

3-Cut Adhesive Tape—2", 5/8", and 3/8" rolls, all 5 yards long, all on one spool for office or call bag. Eliminates coarse tearing.

Sterile Cotton Balls—Machine-made for uniformity, absorbency, 500 per package.

3" x 3" Gauze Sponges—in two handy packages of 300 and 1,000 sponges.

KERLIX* Rolls 12's—a box of a dozen crinkled *Kerlix* Rolls—far softer, fluffier, more resilient than ordinary gauze.

Curity

DRESSINGS IN DOCTOR-PACKS

BAUER & BLACK

Division of The Kendall Company

*Reg. U. S. Pat. Off.

"the leaving of a sponge in a wound is not good medical practice and does not require the testimony of expert witnesses to establish this fact, the proper or improper use of x-rays does" so require (40 N.W. 2d 457).

PROBLEM: A surgeon performed a nasal plastic operation on a woman in August 1946, and a second operation in September to remove resulting keloids and adhesions. Treatments continued about two months, then the surgeon referred the patient to a specialist for roentgen treatment. The surgeon did not treat the patient thereafter, although she went to him occasionally for observation. In June 1948, the woman consulted an attorney about suing the surgeon for malpractice, but suit was not brought until the middle of January 1949. Was the claim "outlawed" under a statute requiring such suits to be brought within two years "after the cause of action" [the right to sue] "shall have accrued"?

COURT'S ANSWER: Yes.

The New Jersey Supreme Court discusses at length differing judicial notions as to when right to sue a doctor for malpractice should be deemed to accrue for the purpose of computing the time limit for suing. Reference is made to the attitude of some courts that because of the confidential relationship, a patient's natural reliance upon his doctor, and the fairness of allowing the latter opportunity to correct mistakes, the time for suing should not be deemed to accrue until treatment is ended.

The court mentioned that fraudulent concealment by the doctor of negligent injury or a continuing course of negligent treatment may postpone the running of time against right to sue (77 Atl. 2d 240).

...A Complete Response *in* HYPERTENSION

THE BLOOD PRESSURE DROPS

Through reduction of peripheral resistance, Veriloid produces a significant drop in arterial tension. Not only is that large group of patients with moderate hypertension benefited, but also patients with severe essential and malignant hypertension. The average dose of from 2.0 to 5.0 mg. four times daily after meals and at bedtime usually suffices, although individualization of dosage is essential for maximum therapeutic efficacy and avoidance of nausea.

VERILOID* **Now Available in 3 Tablet Sizes**

Veriloid, a unique biologically standardized fraction of Veratrum viride, is now available in 3 dosage units for maximum economy—1, 2, and 3 mg. tablets; bottles of 100, 500, and 1000.

*T.M. OF RIKER LAB., INC.

THE PATIENT IMPROVES SUBJECTIVELY

The gratifying feature of Veriloid therapy is the speed with which the distressing discomfort of hypertension is overcome. Headache disappears, easy fatigability lessens, vision has been reported to improve through absorption of retinal exudations, and kidney function is increased. These beneficial changes, often experienced before the blood pressure has dropped significantly, are presumably related to the vasorelaxation induced by Veriloid and the resulting improved tissue nutrition. Literature available on request.

RIKER LABORATORIES, INC.
8480 BEVERLY BLVD., LOS ANGELES 48, CALIF.

VERILOID

A PRODUCT OF RIKER RESEARCH

PROBLEM: The administrative authorities of a New York state mental hospital knew that a drill point had been left in bone after operation upon an inmate and that there was continuing infection and drainage at the site of operation. Could the state be held liable to the inmate for damages for failing to take steps to remedy the condition?

COURT'S ANSWER: Yes.

The New York Supreme Court, Appellate Division, Third Department, said that it was not necessary to decide whether the New York law creating the court of claims imposed upon the state "responsibility for all the professional acts of physicians in its employ." But the court did decide that, in this instance, the state had assumed such control over the treatment of the inmate as to be "required to exercise the reasonable judgment of a competent nonmedical administrator of such hospital" and to provide for "reasonably adequate medical investigation of the cause of/and treatment for the condition" (100 N. Y. S. 2d 693).

PROBLEM: Under a statute authorizing revocation of a license to practice for deception or fraud in "practice," can there be a revocation for irregularity in applying for a license?

COURT'S ANSWER: No.

A case decided by the Nevada Supreme Court involved a chiropractor's license, but the same legal principle would, of course, apply to a similarly worded medical practice act.

The court said that failure to verify an application for a license, as required by statute, could not be regarded as such fraud in applying as to justify revocation (224 Pac. 2d 313).

WAPPLER
Cold Cautery
SCALPEL

A Powerful
High Frequency Apparatus for
Electro Surgical Procedures

Note
these Convenience Features

THE WAPPLER COLD CAUTERY SCALPEL is a miniature high frequency apparatus which provides a high frequency current that can be utilized both for cutting and coagulation. The name "Cold Cautery" was selected to describe the effect of the current when applied to tissue because the electrode itself is cold, while the hot point, or thermal cautery, severs tissue by a searing contact of a heated metal wire electrode. The thermal or hot point cautery has certain limitations for operative work, such as excessive tissue destruction by radiation of heat, which in turn creates severe scar formation.

The Wappler Cold Cautery Scalpel being a high frequency apparatus, provides cutting and coagulating current which may be precisely controlled in intensity.

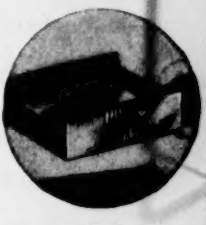
SPECIFICATIONS

Model C-450 is for operation on 110V. A.C. 50-60 cycles.
Model C-450A is for operation on 220V. A.C. 50-60 cycles.
Model C-450B is for operation on 110V. A.C. 25 cycles.
A footswitch and vacuum tubes are furnished with each model.

WRITE FOR LITERATURE *which completely describes various sets of electrodes and accessory instruments.*

Conducting cords leading to the active and indifferent electrodes are housed within the case. To return the cords to their original position, pressure on the button above them instantly rewinds the cord.

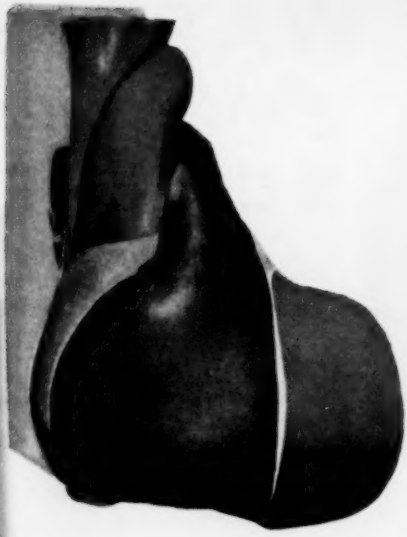
The drawer and contents are automatically ejected from the case upon pressure on a button located directly above the drawer.

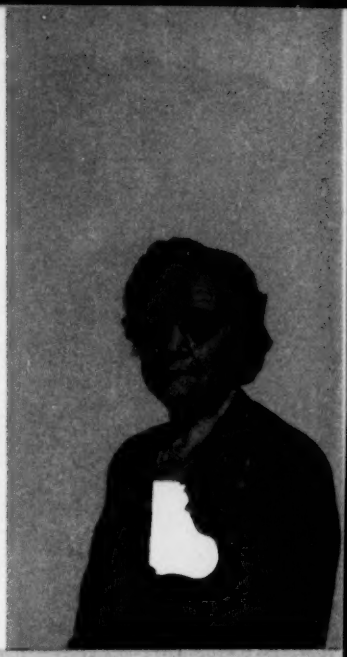


The cord connector of the shock-proof footswitch is plugged into the outlet marked "Footswitch." Bipolar electrodes, handle and cord are plugged into the receptacle marked "Bipolar."

Two outlets marked "Light" in center of the panel provide a means of supplying diagnostic light source. Conducting cords may be immersed in sterilizing solution in tray.

AMERICAN CYSTOSCOPE MAKERS, INC.
1241 LAFAYETTE AVENUE, NEW YORK 59, N. Y.





for trouble-free, prolonged cardiac therapy with Calpurate

try it—observe the difference

Calpurate, being a double salt, releases its xanthine component gradually. Result: gastric irritation, if evidenced at all, is insignificant.

Special coatings to prevent gastric upsets are not necessary with Calpurate as they are with preparations containing highly soluble theobromine salts.

Calpurate does not contain the sodium ion.

Digitalis may be coadministered with Calpurate, since the calcium ion and the digitalis glycoside bear no synergistic relationship to each other.*

*Friedman, M., and Bine, R., Jr.: J. Clin. Investigation 24:1182, 1947.

in cardiac decompensation

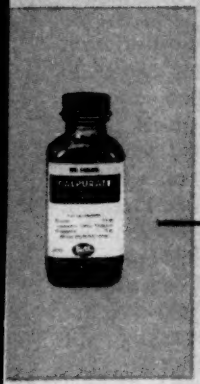
with or without edema, the myocardial stimulation of Calpurate is quickly beneficial. Calpurate is a mild diuretic.

in coronary disease

because of its sustained coronary dilation, Calpurate is valuable as a preventive against the frequency and severity of angina pectoris attacks. In thrombosis, when blood supply is equal to increased vigor of contraction, routine use of Calpurate augments blood supply and allays cardiac failure.

in hypertension

Calpurate with Phenobarbital relieves stress and improves circulatory efficiency, while the sedation exerts a desired calming effect.



Calpurate (7½ gr.) Tablets

Theobromine Calcium Gluconate, Maltbie

Calpurate (7½ gr.) with **Phenobarbital** (¼ gr.)

THE DOUBLE SALT WITH THE TRIPLE USE

Maltbie Laboratories, Inc., Newark 1, New Jersey

Washington Letter

Civil Defense Program Emphasizes Civilian Hospital Need

Washington's concentration on emergency defense problems insures that more hospitals will be built, and built promptly. However, all of the hurry-up conferences and hearings have left unsettled several important questions:

What federal agency will be responsible for handling the program?

To what extent can the long-range hospital planning formula be applied to the emergency construction?

Assuming the federal government will have to operate as well as construct some hospitals, what limitations are advisable on this phase of government participation?

The problem does not concern military or Veterans Administration hospitals, around which arguments have boiled ever since World War II. Army and Navy will reactivate closed hospitals as needed. With wounded men returning every day, economy advocates will have to be certain of their facts before they challenge this expansion.

Veterans Administration now is barely able to scrape together essential staffs, so the usual political demands for more VA hospitals take on a hollow sound. For years, President Truman has insisted that VA's long-range program of hospital construction would meet all requirements. His critics still don't admit that Mr. Truman is right, but now they are inclined to admit that he will prevail. So for the present we can expect a cessation of the traditional arguments over military

and VA hospital construction needs.

The question now is all-civilian. In anticipation of an enemy bombing attack, there is agreement that more civilian hospitals have to be built. Also, there is little argument about how many millions of federal dollars have to go into the new structures. The specific needs cannot be estimated now but will have to be provided for in the months and years ahead, as they become apparent. The big question is who is going to run the show.

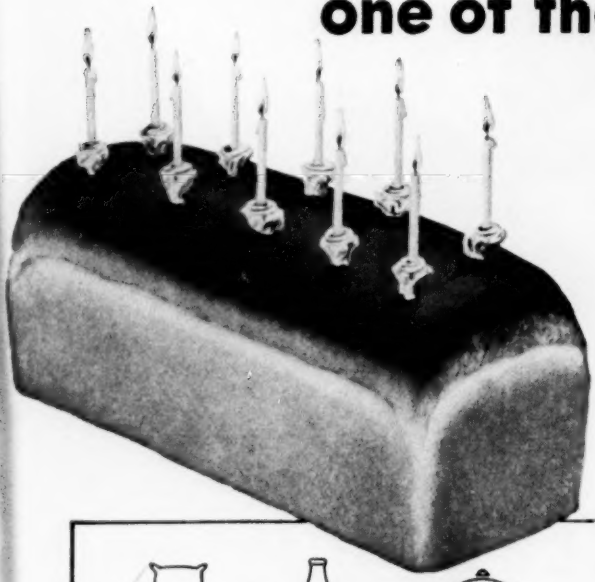
Professional people, in general, would like to see the emergency plan handled through the Hill-Burton machinery which would turn over federal funds to states on a per capita income-population formula. An effort would be made not only to place hospitals where they are most needed, but also to construct hospitals of a size that bears some relation to the community's future needs. However, because of carefully arranged checks and balances, the Hill-Burton program is not adaptable to a fast-moving emergency construction schedule. Simplification of procedure, to allow the federal administrator great discretion in selection of sites and the right to make outright grants, would permit use of the personnel and experience of the Hill-Burton organization.

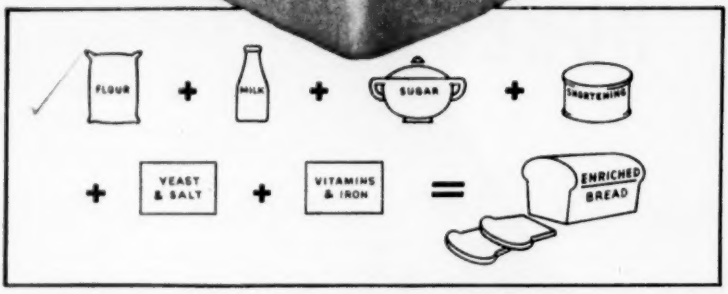
Receiving greater consideration now—hearings under way in both House and Senate—is a new edition of the Lanham act, which generally proved effective in World War II and immediately afterward. The bills as written give the federal Housing and Home Finance administrator broad powers to stimulate the building of housing, schools, and hos-

(Continued on page 54)

This is the 10th anniversary

one of the most





Doctors: Send for this free informative booklet for distribution to your patients.

American Bakers Association
20 N. Wacker Drive
Chicago 6, Illinois

Please send me, without charge, the new, informative booklet "Let's Look Into Enriched Bread." Number of copies____

Name _____

Street _____

City _____ *P.O. Zone* ____ *State* _____

# of ENRICHED BREAD... significant contributions to our better health

By

ELMER L. HENDERSON, M.D.
President,
American Medical Association

"It is encouraging and gratifying to compare the health of the American people today with what it was 10 years ago.

"And I do not think it is too much to say that a very important part of the more buoyant health and the increased mental and physical vigor the American people enjoy today can be directly credited to the enrichment of bread with essential vitamins and minerals.

"We of the American Medical Association predicted these beneficial results as far back as 1939, when our Council on Foods and Nutrition recommended that iron and certain vitamins normally present in wheat, but largely lost in milling, be restored to flour.

'That is why this 10th birthday of enriched bread is a significant occasion to the medical profession—one on which I am proud and happy to congratulate, on behalf of my colleagues, the many people whose untiring efforts made possible the bread enrichment program.

"Our nation owes a debt of gratitude to the scientists, the doctors, the millers, and the Bakers of America who *voluntarily* brought to the people one of the most significant contributions to better health in our generation. It was done with the wholehearted cooperation of our federal government, but *without coercion.*

"I firmly believe that such a miracle could happen only in America."

Elmer L. Henderson M.D.

Published as a public service to help give you a better understanding of the food you eat most often.

pitals, with outright grants or long-term loans as conditions dictate. Top Federal Security Agency officials have endorsed the idea. However, Administrator Oscar Ewing, his deputy, John Thurston, and Surgeon General Leonard Scheele are troubled about delegation of authority. Unless the bill is changed, the Housing Administrator will be responsible for the whole program, including hospitals. President Truman would be authorized to place the hospital operations under the direction of the surgeon general in the case of hospitals, but there is no assurance that Mr. Truman would do this. Failure to do so would place responsibility of a tremendous hospital construction program upon the Housing Administrator and a hastily assembled, inexperienced staff.

The new Civil Defense Administration also enters into the hospital construction picture. CDA may make 50-50 matching grants to hospitals for exclusive use in providing such features as thick walls and bomb-proof cellars. Also, the CD Administrator may certify a hospital as essential to civilian defense, thereby making it eligible for a long-term loan from the Reconstruction Finance Corporation.

The general picture is one of complications, confusions, and delays; the inevitable initial phase when several governmental departments want to do the same thing at the same time. This confusion is only temporary. The need for hospitals is recognized and a satisfactory arrangement will be worked out, possibly soon.

Washington Notes

The male nurse still is at the bottom of the totem pole, as far as the

military services are concerned. While female nurses are eagerly sought and given commissions, male nurses must enter as privates, many through the draft, and even then are not eligible for commissions.

Navy doctors, going on duty for the first time, will spend the first six months on indoctrination studies and duty tours designed to insure the best possible type of Navy medical officer. Only question is whether personnel shortages will allow the men this length of time for training.

Red tape can be cut when the right men get the scissors. An example is Public Health Service's War Claimant Branch. For weeks this branch has been doing an efficient job of laying the groundwork for priorities in civilian health supplies, without any official status whatever. Surgeon General Leonard Scheele scraped up money from various PHS budgets and shifted personnel from other jobs.

Civilian members of Armed Forces Medical Policy Council are: Dr. I. S. Ravdin of Philadelphia, surgery professor at University of Pennsylvania; Dr. W. Randolph Lovelace II of Albuquerque, a trustee of Lovelace Clinic; and Dr. James P. Hollers of San Antonio, a practicing dentist and former officer of American Dental Association. All have been active in reserve officer affairs. The Council is to be a working one, actually participating in formation of Defense Department medical policies. One of its responsibilities is to advise the secretary on totals of reserves who may be called up

(Continued on page 60)

"You Know Nothing Else Agrees with me!"

Available Without Charge: Recipe Folder showing how Meyenberg Evaporated Goat Milk can be used in cooking.

When colic, vomiting or diarrhea persists despite formula changes, the presence of cow's milk lactalbumin allergy is often indicated. Prescribe Meyenberg®— the original Evaporated Goat Milk... natural milk that can be substituted in the formula without change in values, nutrition, or flavor. Meyenberg Goat Milk is sterile, uniform in quality, available in 14 oz. cans at most pharmacies.

Also for baby: HI-PRO,® high protein, low-fat powdered cow's milk.

For Further Information, Literature, etc., write

Jackson-Mitchell Pharmaceuticals, Inc.

formerly SPECIAL MILK PRODUCTS, Inc.

PRODUCTS

LOS ANGELES 64, CALIFORNIA • SINCE 1934

Double

FOOD IN *Obesity*

The double trouble in managing obese patients is a twin torment of appetite and bulk hunger. One might successfully depress appetite, but the intense, gnawing hunger and sense of emptiness which besets many obese patients on a restricted diet cannot be easily controlled by the will alone.

OBOCELL—a combined hunger *and* appetite depressant—doubles the power of resistance and makes adherence to a restricted diet much easier for more prolonged periods because both bulk hunger and appetite are treated synonymously.

OBOCELL supplies methylcellulose (150 mg.), an indigestible, non-nutritive bulking agent, plus dextro-amphetamine phosphate (5 mg.), the most potent agent to curb the appetite. *Supplied:* Bottles of 100, 500, 1000 at prescription pharmacies everywhere.

Obocell

IRWIN, NEISLER & CO. **DECATUR, ILLINOIS**

without undue risk to civilian health.

National Advisory Committee to Selective Service has set up a system for double-checking the information on some draftee doctors. Data on their individual cards is compared with similar information from hospitals and medical schools.

Most critical manpower classifications are not physicians, but technicians. Local advisory committees are asking deferments for x-ray equipment servicemen and orthopedic and prosthetic technicians.

Army estimates it will have to enroll about 600 women medical specialists, double the present total, by the end of June.

Federal Trade Commission is alerting investigators to the fact that the shortage of physicians will make it "increasingly important that advertisements promoting food, drugs and curative devices convey only truthful statements."

Clark Tibbitts, who directed last summer's White House Conference on Aging, is head of Federal Security Agency's new permanent Committee on Aging and Geriatrics. He is assistant chief of FSA's Public Health Methods division.

Dr. **Jack Masur** replaces retiring Dr. R. C. Williams as director of PHS Bureau of Medical Services. Dr. Williams becomes medical director for state of Georgia.

An initial $600,000 has been secured by PHS for a research project in blood collecting, separating, and preserving. The study will not duplicate nor conflict with Red Cross's blood collecting program.

Dr. **Paul Magnuson** in a postdismissal statement blamed three unidentified top VA aides for his two-year

NEW **DOUBLE** antibiotic action

with a single **3** *cc. injection*

Combiotic P-S

Penicillin and dihydroStreptomycin

providing:

crystalline procaine penicillin G *for prolonged action*	300,000 units
buffered crystalline sodium penicillin G *for fast action*	100,000 units
dihydrostreptomycin (as the sulfate) *for broadened therapeutic effect*	1 Gram

prepared with ease, by the addition of sterile aqueous diluent

administered intramuscularly in single injections of 3 cc., usually q. 12 h.

effective against sensitive pathogens of the Gram-positive and Gram-negative groups

indicated in bacterial endocarditis, particularly Gram-negative and penicillin-resistant infections; urinary tract infections, including acute gonococcal urethritis; secondary upper respiratory infections; surgical prophylaxis; and in certain other infections of mixed bacterial origin

Antibiotic Division **Pfizer** CHAS. PFIZER & CO., INC. *Brooklyn 6, N.Y.*

row with VA Administrator Carl Gray, Jr. The ousted VA medical director said he had to obtain information about his own program "through the back door."

Chairman James E. Murray (Dem., Mont.) refuses to let his Senate Labor and Welfare Committee forget about the aid to medical education bill. However, his first efforts to get committee approval were not successful, in spite of the fact the committee unanimously indorsed the plan in the last Congress.

Observers were surprised to learn that the Defense Department's manpower bill dropped out a section of the doctor-draft bill which would have insured an adequate number of premedical students. Defense Department's idea was to include medical students in general college deferments.

Senator Hubert Humphrey's investigation of VA may overflow into other health fields. The Minnesota Senator, a pharmacist himself, is a close follower of medical legislation and a strong supporter of most of the administration medical program.

New members on medically important committees are: House Interstate and Foreign Commerce—F. Ertel Carlyle (N.C.), John Bell Williams (Miss.), Peter F. Mack, Jr. (Ill.), Homer Thornberry (Texas), Louis B. Heller (N.Y.), and Kenneth A. Roberts (Ala.), Democrats; Richard W. Hoffman (Ill.), J. Edgar Chenoweth (Colo.), and John V. Beamer (Ind.), Republicans. Senate Labor and Public Welfare—John O. Pastore, (R.I.), Democrat; Irving M. Ives (N.Y.), and Richard M. Nixon (Calif.), Republicans.

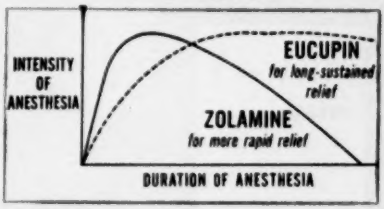
Now... more rapid, more sustained relief of earache

New combination of complementary local analgesics, *quick-acting* zolamine and *long-acting* Eucupin, gives more rapid and more sustained relief of otalgia.

As compared to benzocaine and chemically related compounds, zolamine and Eucupin are more potent and therefore produce a clinically more desirable local analgesic effect.

Otodyne is slightly viscous, thus adherence of the active ingredients to the epidermal surface is promoted. Hygroscopic action effects mild decongestion.

NEW—two analgesics combined for complemental effect



Formula:

Zolamine (N, N-dimethyl-N'2-thiazolyl-N'-p-methoxybenzyl-ethylenediamine)	1%
Eucupin® dihydrochloride*	0.1%
Polyethylene glycol	q. s.

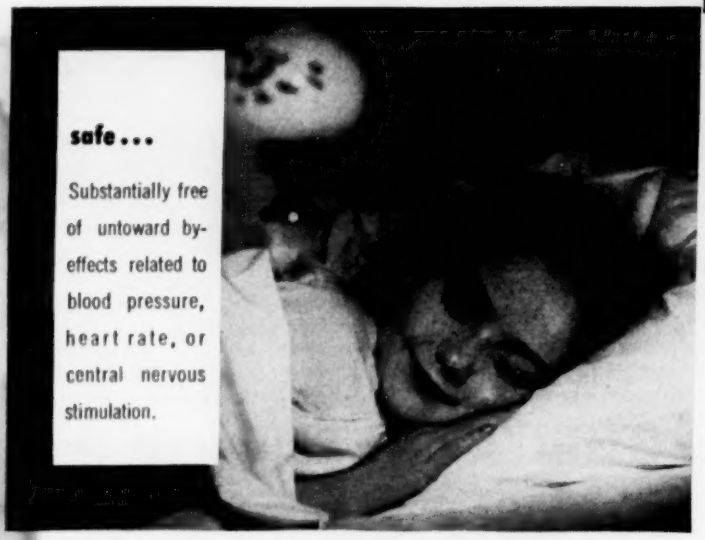
Dropper bottles of ½ fluid ounce (15 cc.)

White's OTODYNE® NEW ANALGESIC EAR DROP

WHITE LABORATORIES, INC.,
Pharmaceutical Manufacturers, Newark 7, N. J.

"Eucupin"—Brand of isoamylhydrocupreine is a registered trademark of White Laboratories, Inc

Wyeth®



LETS THE PATIENT SLEEP AT NIGHT

EFFICIENT NASAL DECONGESTANT...
Relief begins in minutes—lasts for hours.

Because WYAMINE is notably free of undesirable side-actions common to other vasoconstrictors, it is SAFER to use in individuals suffering from high blood pressure, heart disease, diabetes, or thyroid disease.

Available as: SOLUTION WYAMINE SULFATE, *Bottles of 1 fl. oz.*
WYAMINE-TYROTHRICIN NASAL SOLUTION, *Bottles of 1 fl. oz.*
Wyamine-Penicillin, *Capsules, Penicillin with Vasoconstrictor, for preparation of nasal solutions.*

WYAMINE®

MEPHENTERMINE
N-methylphenyl—*tertiary*—butylamine WYETH
WYETH INCORPORATED
Philadelphia 2, Pa.

Medical Aspects of Civil Defense

Foreword

MAURICE B. VISSCHER, M.D.*
University of Minnesota, Minneapolis

THE medical aspects of civilian defense deserve the attention not alone of physicians but of all persons who have, because of training and experience in related activities, capacities which will be usable for treating casualties and preventing disease after a catastrophe. The proper time to prepare for a calamity is before, not when, the disaster occurs.

In a democratic society, citizens have opportunities and obligations to contribute to the common welfare by planning and working. This issue of *Modern Medicine* is devoted to a digest of official statements regarding civilian medical defense with the hope and confident expectation that the physicians of the United States may thereby be enabled to understand more precisely what the potential medical problems are, be encouraged to set up specific plans in their own communities and, most important of all, proceed with the execution of the plans to cope with a catastrophe which may occur tomorrow, next year, or five years from now.

Stated very simply, the medical problems to be anticipated in the event of a surprise daytime attack with a small atom bomb on a large city with an average density of population are these: There will be about 120,000 casualties, two-thirds of them needing medical attention. Spread evenly over the probable surviving physicians in a city of 1,000,000, there will be 50 surviving casualties per physician. This is the

* Professor and Head of the Department of Physiology, University of Minnesota, Minneapolis.

optimum situation if all physicians were mobilized and each one were assigned to an appropriate task. Actually, the ordinary medical activities of physicians in the treatment of non-disaster-related emergencies may not be ignored, so that the available physician pool will inevitably be somewhat smaller, and the real load larger.

The medical problems of major importance for civilian defense are those dealing with the treatment of casualties and the prevention of epidemic disease. The latter obviously is related to supplies of food, water, and shelter.

For treatment of casualties of the number to be expected, obviously no large city has enough [1] hospital facilities, [2] physicians, [3] nurses, [4] anesthetists, [5] ambulance services, [6] laboratory technicians, [7] protected food and drug supplies, and [8] safe auxiliary water supplies, among other requirements, to meet the needs of atomic war catastrophe. A prudent medical profession will prepare to meet the abnormal exigencies which are now confronting the country.

Any proper solution requires the use as emergency hospitals of many buildings constructed for other purposes. Likewise no reasonable plan can be made which does not bring large numbers of persons whose normal activities are quite different into medical work. First, at least 1 person in 10 in the population must be instructed in first-aid technics. Second, large numbers of emergency nurses and orderlies should be trained. Third, many persons in fields allied to medicine will need training to do particular jobs ordinarily considered to be those for physicians, highly skilled nurses, or technologists. For example, many persons with some basic education may be used as emergency anesthetists. Many others should be taught the methods of intravenous therapy. Still others should be assigned to do blood typing and matching. By all means, dentists, pharmacists, veterinary physicians, chemists, school science teachers, former nurses, and former technologists should be recruited into organized civilian medical defense reserves.

Personnel for the detection of radiation, chemical, and biologic warfare hazards need to be provided. Supplies must be procured and stored to outfit temporary emergency hospitals. Suitable food stores should be maintained and safe water supplies provided. Facilities for transportation and

evacuation of the casualties and the shelterless should be planned and maintained.

In a universal national plan for emergencies, mobile teams of medical and auxiliary personnel should be provided, to be sent to critical locations. However, no large metropolitan area can afford to depend on outside help because such assistance will necessarily be delayed by difficult transportation, and also because in a mass attack numerous cities may be in dire need simultaneously. Similarly, central and regional stores of supplies should be established, but not to the neglect of local accumulations.

The contribution of medical personnel and facilities in undamaged small cities and towns will obviously be to receive and care for evacuees from the target points, which are likely to be the large centers. In the event of a mass attack on many cities throughout the country, the services of every trained person and the use of every facility will be required.

The official responsibility for the organization of medical civil defense unquestionably rests upon governmental bodies. However, physicians should be acquainted with the character and the magnitude of the problems involved and should stimulate and accelerate a sound program. On the one hand apathy may lead to a disastrous unreadiness for attack on civilian populations and installations. On the other, hysteria may lead to unsound and futile activity. The medical profession has a heavy responsibility to the community in these matters and should take a leading part in producing a state of real preparation which will reduce the human toll in the event of total war, without creating an unnecessary state of alarm.

Effects of Atomic Explosion

DEVELOPMENTS in atomic, biologic, and chemical warfare have created a need for new civil defense plans which must recognize that we could have, in a short span of time, tens of thousands of living casualties requiring immediate treatment.

The main problem to be faced is one of sheer volume—of providing personnel, supplies, and facilities to treat simultaneously the great numbers of living casualties resulting from each attack.

THREE DIFFERENCES

Atomic bomb explosions differ from conventional bomb explosions in three important ways:

1] The explosive force released by an atomic explosion is vastly greater than that produced by the most powerful TNT bomb.

2] An atomic explosion releases, in addition to intense heat and light, highly penetrating, invisible radiations which are damaging to living organisms.

3] Some substances which may remain after the explosion are radioactive and emit radiations capable of producing harmful consequences in living organisms.

Because of these differences, the effects of an atomic bomb require special consideration. The area of damage, the number and kinds of casualties, and the extent of contamination depend on the power of the bomb and how it is exploded—whether at high or low altitude, or under ground or water, whether on a clear or stormy day.

HIROSHIMA AND NAGASAKI

These discussions are based primarily on data derived from the explosions in Japan of the so-called nominal atomic bomb—roughly equivalent to 20,000 tons of TNT. These bombs were exploded approximately 2,000 ft. above the earth on a clear day, the altitude at which a nominal bomb is estimated to have the greatest effect.

The Hiroshima and Nagasaki bombs destroyed or severely damaged buildings and killed or injured many people for more than 1 mile from a point on the ground directly below the explosion. The extreme limit of structural damage was about 4 miles.

More powerful bombs could cause a wider area of damage, but very great increases in explosive forces are necessary to accomplish relatively small increases in the areas of damage. It would be necessary, for example, to double the power of a nominal bomb to increase the radius of severe damage and injury 25%.

EXPLOSIVE EFFECTS

The explosive effects of an atomic bomb burst are essentially the same as from an equivalent burst of TNT. However, the atomic bomb releases a greater amount of heat and pro-

duces a vast quantity of ionizing radiation.

A high air burst, which produces the maximum destructive effects, leaves no dangerous amount of radioactivity on the ground. On the other hand, an atomic bomb exploded in the air at low altitude or on the ground will pulverize and vaporize materials in the immediate vicinity, leaving a limited area highly contaminated by radioactive material.

An atomic bomb exploded under water might produce a "base surge," as in the test explosion at Bikini, which contaminates adjacent land areas. Other types of damage from the explosion itself, however, are reduced.

IONIZING RADIATIONS

Invisible and undetectable by the unaided human senses, ionizing radiations have the following components:

Alpha particles are positively charged. They are unable to penetrate the unbroken skin, but if an element liberating them is deposited within the body, they may cause extreme damage.

Beta particles are moderately damaging, moderately penetrating, and negatively charged. At most they will go through less than an inch of tissue.

Gamma rays are highly penetrating and therefore highly damaging because they can affect deep-lying, vital organs of the body. Gamma rays are similar to x-rays.

Neutrons are uncharged, penetrating, highly damaging particles. Depending on their speed, they can penetrate several feet of tissue.

RADIATION HAZARDS

For practical purposes in planning radiologic defense, the radiation hazards from atomic explosions are of two kinds—initial and residual.

Initial radiation hazards are caused by great quantities of gamma rays and neutrons released during the first minute and a half after the explosion. Initial radiation is the most important radiation hazard created by the high air burst of an atomic bomb; it would produce casualties in individuals caught without protection within 1 mile of the ground zero of a nominal atomic bomb. A median lethal dose of radiation, 400 r, would be received by unprotected individuals ¾ mile from ground zero. Initial radiation is less important in low level bursts and virtually negligible in underwater bursts.

Residual radiation hazards which follow certain types of atomic explosions result from beta particles and gamma rays emitted by fission products, alpha particles from unfissioned bomb material, and a small amount of beta and gamma activity induced in some materials by the initial radiation from the explosion. This hazard is negligible after a high air burst, but is a very serious problem with low level, underground, or underwater bursts.

Residual radiation produces injury in two ways: [1] as a source of external radiation damage, striking and penetrating the body from the outside and [2] as an internal radiation hazard when radioactive substances are inhaled or ingested.

The intensity of radiation from the fission products dies down very rapid-

ly. The presence of residual radiation therefore constitutes an external hazard for only a limited time.

The internal hazards from residual radiation result from the fact that a small percentage of radioactive material, if inhaled or ingested, may be retained in the body for many years. Some of these substances remain radioactive for a long time. This means that relatively small quantities of such radioactive material, once deposited in the body, are capable of producing serious injury over a period of years.

AIR MASSES AND "FALL OUT"

The rising ball of fire from a high air burst carries the bomb particles and fission products upward. The powerful rising air currents produced by the blast and the winds in the surrounding atmosphere disperse this material so effectively that only in exceptional circumstances do the radioactive particles that fall to earth constitute a hazard. The atomic bomb cloud is a hazard to persons flying through it but is not likely to be one to persons on the ground.

The only effect of "fall out" from the first bomb test at Alamogordo in 1945 was to gray the hair on the backs of some range cattle. These cattle have been carefully studied and are normal in all essential respects. They have bred normally and no apparently abnormal offspring have appeared. The Alamogordo burst occurred at an altitude of only 100 ft., far below the optimum for maximum explosive effect. Thus, the "fall out" was much greater than has been observed from subsequent high air bursts.

BASE SURGE

When an atomic explosion occurs under certain conditions in fairly deep water, a base surge is produced. This surge of mist and water droplets may extend for more than 1 mile in all directions and then be carried with the wind. It may be sufficiently radioactive initially to be a direct hazard to unprotected persons several miles downwind, depending on the wind force. In addition, important residual radiation contamination is deposited over the same area.

A base surge composed of dust and vaporized particles might occur in underground bursts, depending on the terrain. Such a burst would be highly contaminating.

Atom Bomb Injury

STUDIES of the A-bomb effects in Japan indicate that when such an explosion occurs, three types of injuries may be expected among the survivors—blast and radiation injuries and burns. The latter will probably constitute the chief injury of a major percentage of the casualties, particularly if no previous warning of the attack is given.

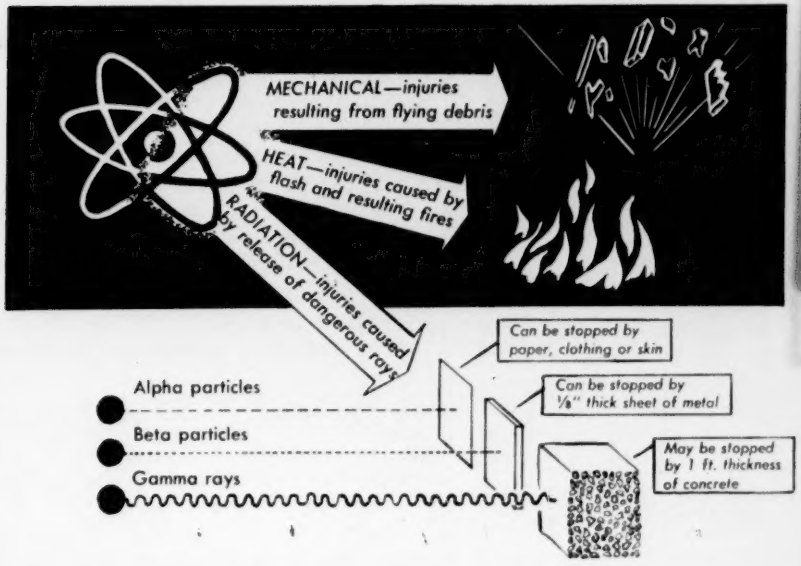
The medical aspects of the injuries may be summarized as follows:

Blast injuries include wounds resulting from the shock wave of the explosion and those resulting from such secondary effects as collapsing buildings and flying debris. Direct blast injuries were not common in the Japanese atomic bombings. Those which were encountered included damage to the lungs and gastrointestinal tract.

Indirect blast injuries are a major problem and include the complete range of traumatic damage, with a high incidence of injuries resulting from flying glass and other piercing missiles.

Burns are of two types: flash burns resulting directly from the intense radiant heat released by the explosion, and flame burns resulting from

Three Types of Injury Resulting from Atomic Explosion



CLINICAL SYMPTOMS OF RADIATION SICKNESS

Time after exposure	Lethal dose (600 r or more)	Median lethal dose (400 r)	Moderate doses (300-100 r)
	Nausea and vomiting after 1-2 hours	Nausea and vomiting after 1-2 hours	
First week	Short or no latent period		
	Diarrhea Vomiting Inflammation of mouth and throat Fever Rapid emaciation Death (Mortality probably 100%)	No definite symptoms	No definite symptoms
Second week		Beginning epilation Loss of appetite and general malaise	
Third week		Fever Severe inflammation of mouth and throat	Possible symptoms: Epilation Loss of appetite and general malaise Sore throat Pallor Petechiae
Fourth week		Pallor Petechiae, diarrhea, and nosebleeds Rapid emaciation Death (Mortality probably 50%)	Diarrhea Moderate emaciation (Recovery likely unless complicated by poor previous health or superimposed injuries or infections)

the numerous fires which may be started.

Radiation injuries are caused by the penetrating ionizing radiations emitted by the bomb and its explosion products. Radiation sickness resulting from exposure of the entire body should be differentiated from other forms of radiation injury in which only parts of the body are exposed, leading to cutaneous radiation burns and other local tissue damage.

Only about 15 to 20% of the surviving casualties of an atomic bombing suffer chiefly from radiation sickness. The majority of these, moreover, do not require medical attention for several days after the explosion. With adequate radiologic defense, injuries from residual radiation largely can be prevented and should not constitute an immediate major medical problem. Clinical effects of radiation among survivors in Japan indicate that the severity of symptoms is related to the amount of radiation absorbed in a single dose as governed by shielding and distance.

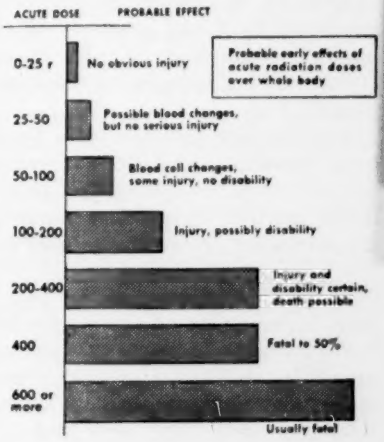
Any living tissue can be destroyed by a sufficiently high dose of ionizing radiation. The tissues of the blood-forming system are among the most sensitive. The body's system of resistance to infection, particularly the reticuloendothelial system, also is highly susceptible to radiation damage.

Treatment must be directed toward combating infection by the use of antibiotics, replacement of missing blood elements by transfusion, and attempts to decrease the hemorrhagic tendency by such specific agents as may be available. General supportive and symptomatic care is important.

Early transfusions, given before blood changes have occurred, have not been shown to alter the outcome of radiation sickness. The initial supply of whole blood should be reserved for those patients in shock or burned who need it immediately. Blood transfusions should not be given until medical indications are clear-cut.

An individual who has received a lethal dose of radiation may be expected to display symptoms, including nausea, vomiting, fever, and prostration, during the first twenty-four hours. Before considering such symptoms as indicative of severe radiation sickness, however, other types of injuries, shock, or emotional disturbances should be looked for that might produce similar symptoms but from which the patient might

Effects of Radiation in Relation to Total Dose



recover promptly if given adequate treatment.

SUBSEQUENT RADIATION EFFECTS

A careful continuing study of atomic bomb survivors in Japan is being conducted by the Atomic Bomb Casualty Commission under the National Research Council. The only permanent delayed effect observed to date which can be directly attributed to radiation has been the appearance of cataracts in a number of individuals who were within 3,300 ft. of ground zero.

Although the time lapse since the bombing of Hiroshima and Nagasaki is not sufficient for any real evaluation of genetic effects, large numbers of deformed or otherwise abnormal offspring are not expected in future generations.

INTERNAL RADIATION HAZARDS

Internal radiation hazards result from the body's absorption and retention of appreciable amounts of radioactive substances. This could happen by swallowing grossly contaminated food and water or inhaling radioactive dust particles in an area which has been heavily contaminated.

Any internal radiation is a long-term problem. Inhalation or ingestion of a sufficient quantity of radioactive material to produce immediate symptoms is extremely unlikely.

TREATMENT OF BURNS

The large variety of treatments for burns currently in use indicates that none is strikingly superior and that much more research work in the field is needed. The body area involved, the degree and cause of the burn, and other variable factors may demand some variations in any kind of treatment which is developed. Each physician should be free to use the type of external treatment which his judgment dictates, providing that supplies and personnel are available.

EMERGENCY CRITERIA

The criteria for a satisfactory local burn treatment for the thousands of burn casualties that would result from atomic attack are considerably different from those which would be used to evaluate an individualized type of local treatment. In the latter case, one would search for an ideal treatment for a particular burn.

With mass casualties, however, the need is for an effective method which can be used for all cases and which will be adaptable to mass treatment.

The method must be effective, provide relief from pain, be applicable to all, or nearly all, types of burns, and be usable by first-aid workers and professional personnel alike under the most adverse field conditions. The technic must be suitable for rapid application and consume a minimum amount of work, both initially and in after-care.

Moreover, the treatment must be feasible from the point of view of building large reserves, must not be prohibitively expensive, and should not predetermine subsequent treatment. Once certain ointments or coagulants have been used on a burn, it is nearly impossible to change to another type of treatment even though the attending physician recognizes a need to alter the therapy.

BURNS DRESSING

The following type of treatment meets the above criteria better than any other existing method. The regimen is relatively new and is based on the principle of a dry dressing, providing a covering that relieves pain and bars further introduction of pathogenic organisms. The absorbability of the dressing prevents rapid total saturation with exudate which would lead to the necessity for undesirable frequent changes of dressings.

The dressing consists of a cellulose pad, 1 in. or more thick, faced and backed with gauze, constructed like a sanitary napkin. The gauze facing is extremely fine, 44 by 36, type I gauze, to minimize adherence to the burned areas. The backing is of much coarser gauze to give greater protection.

Overlapping of dressings is undesirable because of probable discomfort to the patient and the great likelihood of creating a point of entry for pathogenic organisms. Each pad, therefore, must be sufficiently large to cover the entire burned area. For this reason, two sizes should be available: one size, approximately 12 by 24 in., for application to extremities and smaller burned areas; and the other, 24 by 36 in., for large burned areas of the trunk; 3- and 6-in. widths are included.

The pads can be cut down or into various shapes to fit small burned areas, the face, hands, and similar regions. The pads have the further advantage of providing dressings for other injuries.

The pad is held in place by a tensile yarn roller bandage, applied firmly and evenly but with only gentle pressure. Rubberized bandages are neither necessary nor desirable.

FIRST AID APPLICATION

In administering first aid in burn cases, civil defense first-aid workers would carry out only a gross cleaning process, i.e., removal of large and easily separated particles of clothing, dirt, debris, or skin. They could then apply the appropriate size of cellulose pad and secure it with a bandage. A tensile yarn bandage will result in smoother, more uniform application of the dressing.

Later, probably sometime after arrival in a hospital, the attending physician may wish to remove the dressing and inspect and clean the area. He would then apply a new cellulose dressing or change to another method of treatment for which he had the necessary supplies available.

RANGES OF TYPES OF INJURIES

Types of injuries	Ranges of injuries (in feet) from ground zero for bombs of different TNT equivalents			
	20,000 tons	40,000 tons	80,000 tons	160,000 tons
Radiation (200 r exposure)	4,800	5,300	5,800	6,300
Burns	11,000	13,400	17,800	21,000
Mechanical	12,000	16,000	20,000	25,000

Estimation of Probable Casualties

In planning for defense against atomic warfare, one of the first steps is to estimate the potential numbers and types of civilian casualties.

The primary assumption in estimating casualties is that the bomb will be exploded in the air at about 2,000 ft. or at the "best altitude" for the bomb used, since this height of air burst results in the greatest area of damage. Such an attack could occur with or without warning, during day or night. Casualties would vary according to conditions at the time of attack.

For purposes of discussion, an "average" American city with a population density of about 13,000 per square mile has been assumed.

CASUALTIES WITHOUT WARNING

A surprise attack in daylight with a nominal bomb exploded at 2,000 ft. over an "average" metropolitan area will produce a total of about 120,000 casualties, killed and injured.

Of this total, 40,000 (33⅓%) will either be killed outright or die the first day. An additional 20,000 (17%) will die in the next five or six weeks. Thus, probably 80,000 casualties (66⅔%) will survive the first twenty-four hours. Of these 80,000 it is estimated that:

48,000 (60%) will have burns
40,000 (50%) will have mechanical injuries
16,000 (20%) will have chiefly radiation injuries

A number of persons will have two or more types of injuries.

This hypothetic result of bombing an "average city" is used for purposes of illustration throughout the following discussion. The percentages may be directly applied in making estimates of any city.

At Hiroshima and Nagasaki, the number of deaths per week, after the first day, was halved each week for seven weeks. Under the conditions assumed, this would mean 40,000 deaths on the first day, 10,000 deaths in the first week after the first day, 5,000 deaths in the second week, 2,500 deaths in the third week, and so on. Few deaths would occur after the seventh week.

Of the injured surviving the first day, approximately one-third, 25,000 to 30,000, will require hospitalization and extensive treatment; about one-third will need hospitalization with a moderate amount of medical care; and the remaining one-third will require little medical care and can be given out-patient medical service.

CASUALTIES WITH WARNING

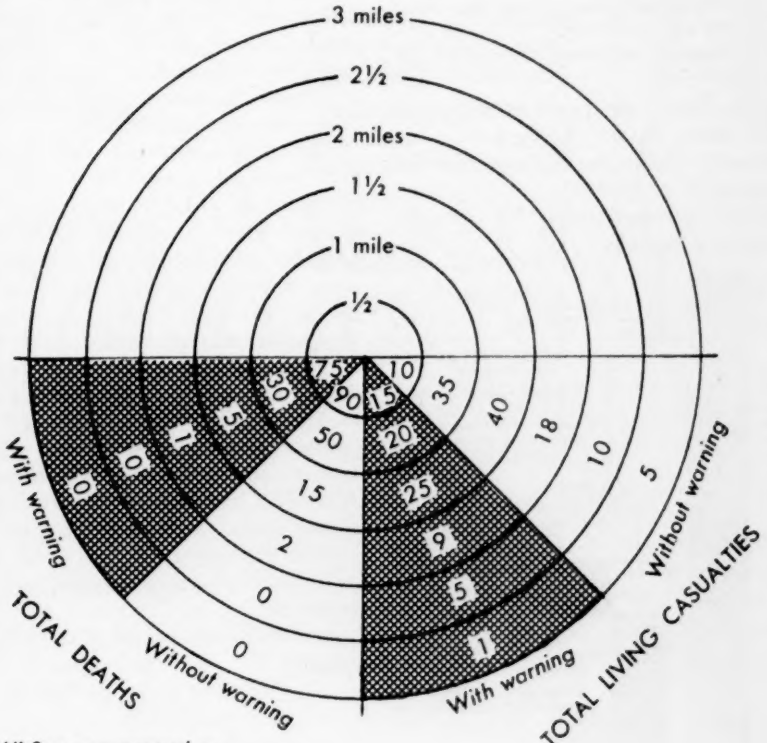
If adequate warning of an impending raid is given to the civilian population and adequate instruction to the public has resulted in good discipline, over-all daytime casualties will be reduced by about one-half. Thus, the total hypothetic number of 120,000 killed or injured is reduced to about 60,000. All other

estimates are reduced proportionately; for medical planning purposes the same percentages may be assumed.

If the bomb is detonated under the same conditions at night, over a primarily business or industrial area, the number of casualties is further reduced. A night attack, *with* warning, will result in about one-third the number of casualties estimated for a daytime attack *without* warning, or two-thirds the casualties for a daytime attack *with* warning.

Outside the area of total destruction, civil defense measures can greatly reduce the number and severity of casualties.

Adequate psychologic preparation by thorough public education regarding the actual effectiveness of atomic weapons can prevent many casualties that would otherwise result from hysteria.



All figures expressed as percentages of total population within each area

Mobilization of Hospital Resources

HOSPITALS are the focal points for civil defense. In event of an atomic attack, about two-thirds of the casualties will need hospital care.

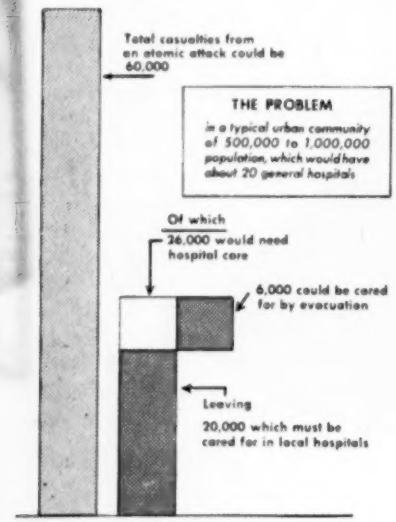
Hospitals available would be:

1] Existing general or special hospitals in the immediate vicinity which are still usable

2] Improvised hospitals or converted nonhospital buildings

3] Hospitals in areas surrounding the attacked city

Obviously, the majority of casualties would have to be treated in improvised facilities, without normal standards of care. Hospital facilities would be reserved only for the most seriously injured.



HOSPITAL PROBLEM in typical city of 500,000 with 20 general hospitals

PREPAREDNESS PLANS

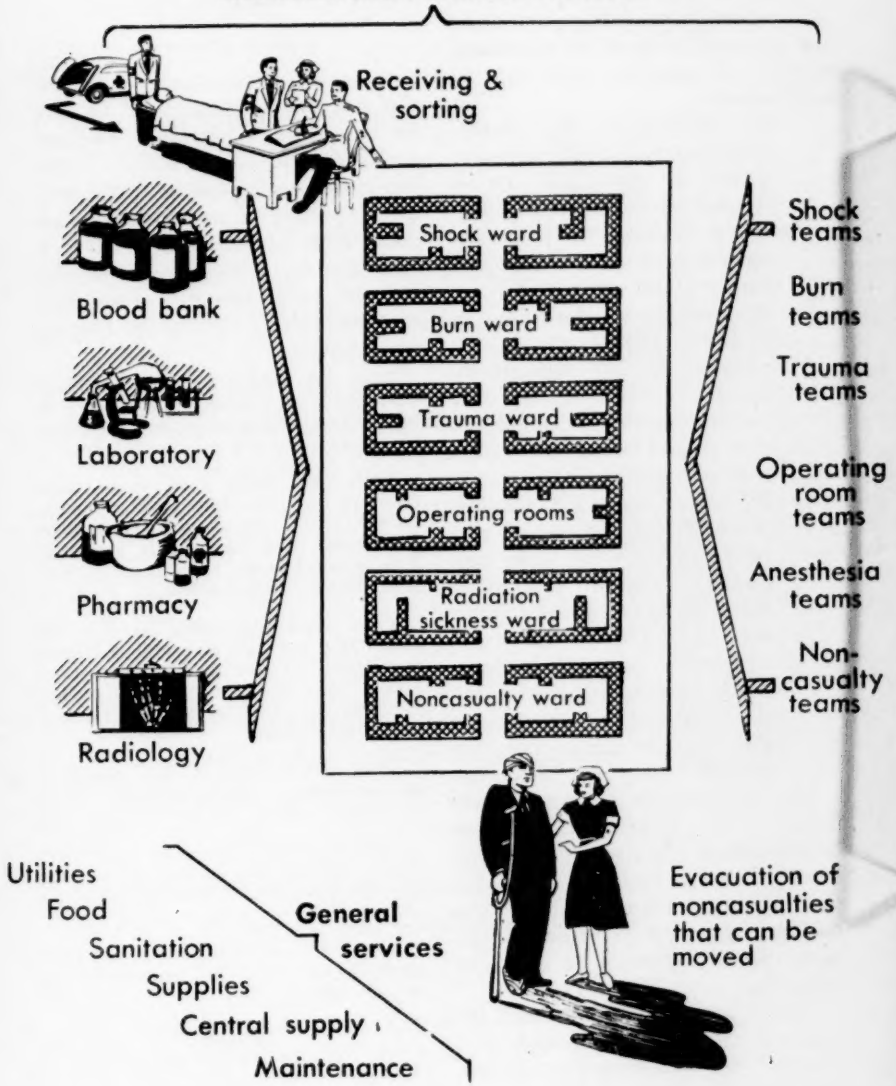
Advance arrangements should be made for evacuation of all hospital patients who can be moved safely on the threat of an impending attack or immediately after attack. A study of the patients within an individual hospital on any sample day probably will reveal that approximately 75% of the patients could be evacuated to their homes, to remote hospitals, or to centers providing convalescent care.

The hospital should now determine ways and means to expand to the greatest possible capacity. The average general hospital with 200 beds for patients may be expanded to 2 or even 3 times normal capacity by utilizing conference rooms, classrooms, storage rooms, corridors, and similar areas. Expansion plans also should include arrangements for using adjacent buildings such as schools, hotels, gymnasiums, warehouses, and residences. Overexpansion with consequent lowered efficiency should be guarded against.

The expansion of the usual departmental activities is based on the following:

- Functional catastrophe organization
  - Functions to be performed by each department
  - Necessary supporting functions
  - Normal functions which can be continued, modified, or curtailed at time of emergency

Functional Organization for Disaster



- Functional staffing pattern
  Plans for the staffing of each department, indicating transfer of personnel from normal activities to emergency duties
- Determination of the maximum number of casualties that can be accommodated
  By discharging and transferring patients. The evaluation should be made with the assistance of the attending physician, following the principles agreed upon by the medical, nursing, and other staffs.
  By restricting admissions to critically injured persons. To care for the less critically injured who will find their way to the hospital, a first-aid station should be provided in a nearby building.
  By adding beds. The number of additional beds which can be set up will vary from hospital to hospital. A diagram should be drawn showing existing beds and locations for temporary beds. Key supervisory personnel should know the plan so thoroughly that it can be put into operation without delay or confusion.

The critically ill noncasualty patients in the hospital who cannot be transferred will require continued care. Provision should be made for medical and nursing services, even though the major attention of the staff will be devoted to care of casualties.

The preparedness plan includes the organization of specialty groups, such as receiving and sorting teams, shock and recovery room teams, trauma teams, surgical-dressing teams, and operating teams, based on the three major categories of casualties: burns, trauma, and radiation sickness.

SCHOOL BUILDINGS

Since existing local general or special hospitals will be able to care for only a small fraction of the surviving casualties of a major civilian wartime disaster, plans to utilize non-hospital buildings as improvised hospitals must be prepared in advance.

In general, school buildings offer the most satisfactory type of structure for conversion to emergency hospital use because:

They are rather evenly distributed throughout a metropolitan area. In large cities there is one school classroom for about each 150 persons in the city.

They offer large floor space, after removal of seats. The average metropolitan school classroom accommodates 30 students and can usually accommodate approximately 20 patients on cots, mattresses, or other pallets.

They have heat, electricity, hot and cold water, and extensive toilet facilities. Practically all city schools have lunch rooms, and most have actual kitchen facilities in which meals can be prepared and served.

They usually are not more than one or two stories high, an important factor if electric power for elevators is lost.

They have wide stairways and corridors. The stairways usually are at least 4½ to 5 ft. wide, and corridors are seldom less than 8 ft. wide.

They have service driveways and playgrounds available for ambulance and supply vehicles.

HOTELS

The advantages of rooms already equipped with beds, extensive kitch-

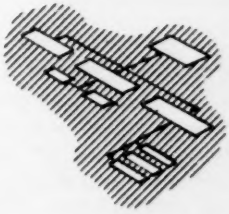
PREPAREDNESS PLAN

1. Designation of buildings to be used

2. Floor plans, indicating necessary alterations

3. Designation of areas of specific activities within buildings

4. Clinical and administrative staffing patterns



5. Establishment of duties of personnel

6. Estimates of supplies and equipment required, with details of sources and methods of procurement

7. Establishment of relationships to a parent existing hospital

8. Establishment of relationship with all other civil defense authorities and activities

en, laundry, and other conveniences are found in hotels.

The multiple small rooms, however, present extremely difficult nursing problems when dealing with large numbers of casualties. Furthermore, hotels usually are multistory buildings, the upper floors of which are almost completely useless for hospital purposes in case of power failure.

However, large public rooms on lower floors may be used. Hotels can be made into convalescent hospitals more satisfactorily than schoolhouses after the immediate phase has passed—for example, by the seventh or tenth day after the disaster.

Many apartment buildings and dormitories have the same advantages and limitations as hotels.

TENT HOSPITALS

Emergency hospitals set up under tentage are not recommended because the severe limitations on the availability of hospital furnishings and equipment necessitate many improvised arrangements, which have to be planned in advance.

The following list is furnished only as a guide:

Hospital beds. Substitutes: metal cots, couches, camp cots, mattresses, straw ticks, household or hotel single beds

Bedside tables. Substitutes: domestic bedside tables and folding tray tables

Bassinets. Substitutes: clothes baskets, large carrying baskets, wooden boxes

Operating lights. Substitutes: domestic household lamps and similar units, Coleman and kerosene lanterns. The last two are explosive and would be a serious hazard near explosive fumes.

Sterilizing equipment. Substitutes: open fires, gasoline and kerosene stoves (fire hazard)

Containers for boiling equipment. Substitutes: kitchen pots and pans, tubs

Surgical basins and kick buckets. Substitutes: large tin cans, galvanized or enameled buckets

Dressing, suture, and instrument containers. Substitutes: fruit jars, other glass jars, tin cans

Operating tables. Substitutes: kitchen tables, dining tables, doors, litters placed on sawhorses

At least one new type of hot water sterilizer, using a solid gasoline fuel, has been developed. In addition, an emergency heat source, using the same type of fuel, is being developed as an auxiliary heater for a steam autoclave installation.

To be sure that these substitute items will be available after a civilian wartime disaster requires a thorough canvassing of neighborhood and nearby homes, stores, and institutions to ascertain potential sources and a careful plan for prompt procurement of the items.

In addition to this equipment, items such as blankets, sheets, towels, cooking and eating utensils must be planned from the same sources.

Given complete lists of necessary items, the warden service can make thorough inventories of all local resources within each neighborhood. Schoolchildren might be used to gather these items.

REGIONAL RESERVE HOSPITALS

Undamaged existing hospitals, expanded as indicated, plus the remaining school buildings in a city should be able to accommodate all, or nearly all, the casualties resulting from one atomic explosion. However, since improvised hospitals are not nearly so effective as regular hos-

pitals, this arrangement will provide at best only minimum lifesaving services. As soon as possible, patients should be transferred to nearby or distant hospitals.

Outlying hospitals would form regional reserves for hospital services.

As soon as possible after a disaster, injured persons should be evacuated to such hospitals for continuation of care and for convalescence and rehabilitation. In general, patients of improvised hospitals should be transferred first.

Another responsibility of regional reserve hospitals might be to receive hospital evacuees from hospitals in a nearby area threatened with a possible air attack in the immediate future.

TRANSPORTATION

One of the chief limitations to the prompt transfer of patients to reserve hospitals would be the availability of transportation. Evacuation requires evacuation points established adjacent to railroads, ship docks, airports, or highways. Such points must be carefully planned in advance with the casualty evacuation service and administrative and dispatching supervisors must be assigned.

The necessity for evacuating large numbers of patients to smaller communities emphasizes the need for physicians and other professional health personnel of these smaller towns to learn how to deal with casualties of modern warfare. Although the initial emphasis in training probably should be made in critical target areas, training also should be given to persons in wide areas surrounding the target areas.

Mutual aid is a state as well as a local responsibility and mobile support operations are entirely a state responsibility. Therefore, arrangements for medical components of mutual aid and mobile support must be made by the local civil defense director with the state civil defense authorities.

AFFILIATED UNITS

In order that existing and improvised hospitals and regional reserve hospitals can be adequately staffed to care for casualties, provision must be made to supplement their existing staffs. Selected general hospitals and medical schools should organize affiliated units of qualified physicians for service in the chain of casualty receiving hospitals, converted hospitals, and regional reserve hospitals.

An affiliated unit might be composed of 24 members, headed by a unit director. The staff might include the following:

1 chief of medical service
1 assistant chief of medical service
2 general internists
1 chief of surgical service
1 assistant chief of surgical service
3 general surgeons
1 orthopedic surgeon
1 oral surgeon
1 pathologist
1 radiologist
1 ophthalmologist
2 anesthetists
8 operating-room nurses

Affiliated units would be called to duty by the state as required, and assigned to existing, improvised, or regional reserve hospitals until local and mutual aid professional personnel could cope with the emergency situation without outside help.

Air transportation of distant affiliated hospital units may be essential.

Organization of First-Aid Care

THOROUGH plans for the rapid mobilization and efficient operation of first-aid and ambulance services are basic to civil defense casualty care.

Large numbers of casualties among local first-aid and professional personnel may be expected in case of attack. Training and organization of neighboring communities are therefore imperative.

Approximately 35% of surviving civilian casualties of an atomic bomb disaster will require transportation by litter to first-aid stations. A single first-aid station can provide screening and minimal emergency care for as many as 600 casualties in its first twenty-four hours of operation.

FIRST-AID STATIONS

Each first-aid station will have the following functions:

Transport litter cases to stations by means of litter teams

Screen casualties to ascertain immediate medical needs and determine disposition of cases

Arrest hemorrhage

Treat shock

Relieve pain

Administer other first-aid treatment

Maintain records

Arrange for transportation of casualties for further treatment or other disposition

After the immediate urgent period, provide clinical service for continued treatment of persons who do not require hospitalization; arrange for evacuation and place of treatment for persons with radiation sickness

STATION LOCATIONS

The exact location of first-aid stations is designated finally only after an attack, since locations must be determined by the area of destruction, the extent to which ambulances can penetrate the bombed area and thereby serve the station, the practical limitations of distance litter bearers can carry patients, and the density of population in the area.

Concentric rings of first-aid stations should be set up surrounding the major damage area. On the first circle, at about 1½ miles from ground zero, 57 mobile stations may be placed at intervals of ⅛ mile. The second ring can be established about 2 miles from the center with 39 first-aid stations located at intervals of ⅓ mile.

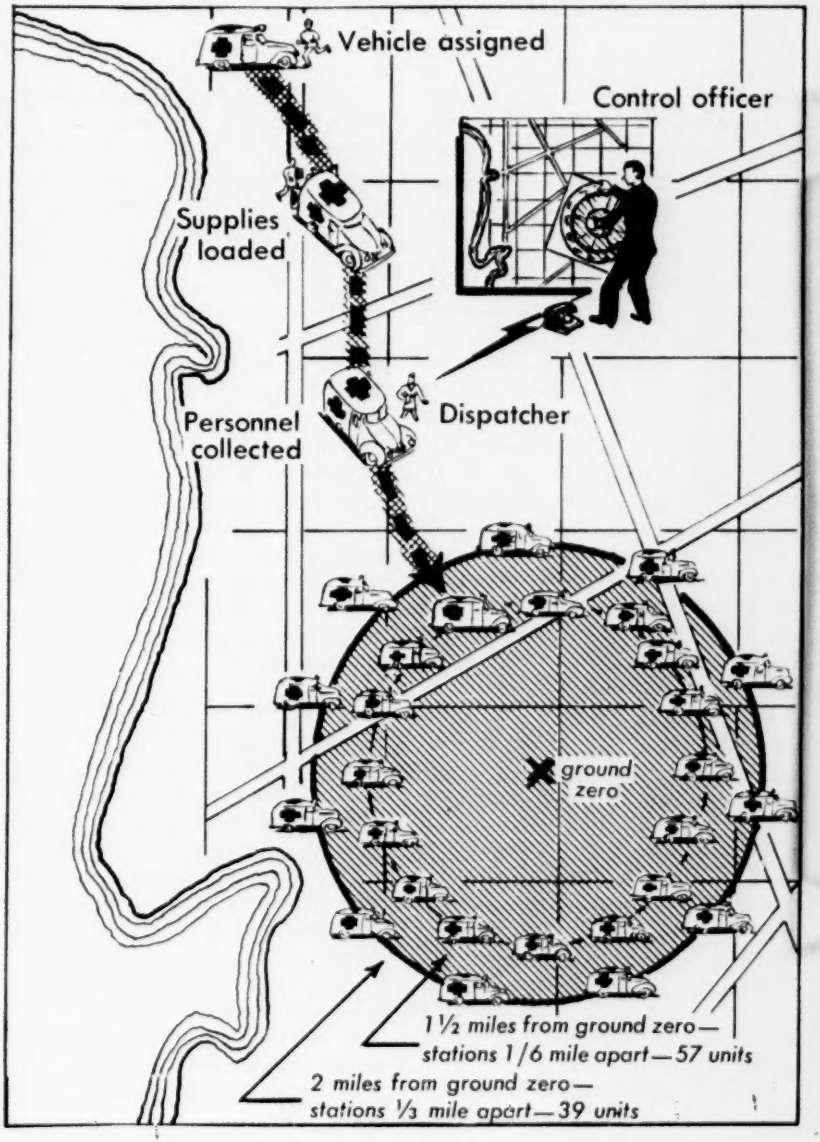
STAFF REQUIREMENTS

The round-the-clock operation of a first-aid station requires the following minimum staff:

Category	*Number*
Physicians	2
Dentists	3
Nurses	3
Pharmacists	2
First-aid workers and nurses' aides	15
Clerical help	6
Litter bearers	150

A physician should be in charge of the station to screen casualties, direct the care of patients, and personally treat the most severely injured and those in advanced shock.

Location of First-Aid Services



Arrangements for Medical Supplies

IMMEDIATE provision of adequate health supplies following a civilian wartime disaster is an urgent and difficult problem.

SURGICAL SUPPLIES

To meet the demands of civilian wartime disasters, consumable surgical supplies must be accumulated through some system which does not now exist. Neither manufacturers, wholesalers, retail surgical supply dealers, hospitals, nor drugstores maintain large stores of surgical materials. The situation in the American surgical instrument industry is similar.

The production capacity of the drug industry is almost unlimited and is sufficiently dispersed to provide continuous production of vital supplies. The manufacturing potential for biologicals and antibiotics, although in not quite so favorable a position as drugs, is satisfactory.

A complete civil defense program in this country, therefore, must provide for building large stores of consumable health, particularly surgical, supplies. It would be prohibitively expensive for each target area to purchase and store health supplies sufficient to cope with every possible wartime disaster. Therefore the Federal Civil Defense Administration proposes to establish stores of certain health supplies.

However, each critical target area will need to have on hand, well scattered throughout the community, health supplies sufficient to last through the early hours of civil defense operations and casualty care. Federal supplies in some cases can not arrive in large quantities in a bombed city for at least several hours after an attack.

In each city within a critical target area, a plan for reception and distribution of federal and other health supplies should be made by state and local civil defense authorities. Federal civil defense representatives will assist in the planning.

A large amount of unloading space is needed to receive shipments by truck, freight car, or plane. Alternate unloading points also must be planned. Personnel for unloading and all subsequent operations are furnished locally.

BLOOD AND DERIVATIVES

Large supplies of whole blood and blood derivatives are indispensable to the treatment of casualties immediately after any type of bombing and for several weeks following an atomic bombing. From this urgent need arises one of the most complex problems of civil defense health supplies.

The complexities of the blood program are due to these facts:

- At present, whole blood cannot be stored more than three to four weeks because of deterioration of red blood cells.

- Plasma, serum albumin, and certain other blood derivatives can be stored for years, but national stocks have been badly depleted. To build a reserve of blood derivatives requires great expansion of blood collections throughout the country.
- Considerable and favorable investigation of the efficacy of such blood plasma substitutes as osseous gelatin, dextran, and polyvinyl pyrrolidine has been carried out, but these substitutes have not received general acceptance by the American medical profession.
- Neither blood derivatives nor blood substitutes can be truly adequate substitutes for whole blood. Their usefulness is limited by their lack of oxygen-carrying red blood cells, although they are useful in initial supporting treatment. Certain specific indications exist, of course, for the use of blood derivatives in preference to whole blood.

REQUIREMENTS

The predictable general needs for blood and plasma, or substitutes, in a war disaster are as follows:

For lacerations, amputations, and other mechanical trauma, immediate need for treatment of shock and to replace blood lost by hemorrhage. Later, whole blood transfusions might shorten the convalescence of patients made anemic by injuries.

For extensive flash and flame burns, immediate need for treatment of shock and continuous requirements for one or more weeks of specific supportive therapy.

For radiation injuries, no immediate need. Persons with immediate severe shock from radiation injury alone from exposure to doses of radiation in the lethal range usually have poor prospects of recovery. Within a few days to two weeks, however, the need for blood increases rapidly for persons who have been exposed to radiation in the range from moderate to ultimately lethal doses. Particularly in cases of exposures to 400 r or less, many lives can be saved by whole blood transfusions given until bone marrow has time to regenerate and produce blood cells, by antibiotics to combat secondary infections, and by dietary and other supportive therapy.

Blood supplies might be necessary in the event of attack with other special weapons, such as biologic agents. No unusual problems which might arise, however, would probably be greater either in volume or in kind than those arising from an atomic bomb attack.

AMOUNTS NEEDED

To meet the demands of atomic warfare, the following tentative method of computing requirements is suggested: The total number of casualties surviving the first day of the attack represents the estimated number of units of whole blood or blood derivatives which would be required each week for the first three weeks.

To illustrate: The hypothetic bombing example employed before, a daytime attack with one atomic bomb preceded by a warning, would produce 60,000 casualties, dead or injured. Of these, two-thirds or 40,000 would be alive twenty-four hours after the bomb explosion. Hence, during the first postdisaster week, 40,000 units of blood or blood

derivatives would be needed. An equal amount would be needed during each of the second and third weeks. Following this period, the need would drop sharply.

The proportions to be supplied in blood and blood derivatives also can be approximated. During the first twenty-four hours, the chief source would be a limited supply of freshly collected blood because large reserves of whole blood could not be stored. Mobilization of donors and shipment of blood would require most of the first twenty-four-hour postdisaster period.

Therefore, only about 20% of blood requirements on the first day could be furnished as whole blood. The remainder would have to be plasma, serum albumin, or blood plasma substitutes. On the second day, it might be possible to supply 50% of blood supplies as whole blood; on the third and succeeding days, 80% whole blood, which would be approximately the desirable percentage.

EQUIPMENT

Two needs relating to blood collections and transfusion equipment are [1] nation-wide standardization and [2] development of improved containers.

Standardization—All the equipment must be interchangeable. Otherwise, rapid and free exchange of blood between blood banks will be impeded by the necessity of finding adapters or using the dangerous and time-consuming procedure of transferring blood from one container to another.

The Department of Defense, the Red Cross, and the National Security Resources Board have agreed on standard equipment which is in use by most blood banks in this country. Other banks will probably take steps to adopt this equipment or to be certain that their equipment is interchangeable.

Containers—At the present time, glass bottles are used as containers, and rubber or plastic tubing is employed for fittings to needles. Work on an all-plastic unit is under way. If this successfully passes tests, it will have the following advantages:

Small cubic content for storage or shipment
Lightness for shipment
Resistance to breakage
Compactness; complete donor and recipient sets being contained in one relatively small package
Adaptability to rapid administration of contents under mechanical or even manual pressure

In addition, the use of an ion exchange resin filter to remove calcium and thereby prevent coagulation is being carefully investigated.

BLOOD GROUPING

Extensive programs of blood grouping, at least in critical target areas, have been widely recommended. The National Security Resources Board and the Federal Civil Defense Administration concur in this general principle when the grouping projects are related to blood procurement and the identification of group O donors.

During the first days after an atomic bomb disaster, blood grouping and cross matching services could not possibly be furnished in quantities sufficient to meet the needs of the thousands of casualties. But

to give blood without an on-the-spot laboratory confirmation of compatibility would compound rather than relieve a difficult situation.

During the first few days, shipments of whole blood to an attacked city should be limited to low-titer group O blood. A peacetime, widespread blood-grouping program, not confined to target areas, will be of great help in making large numbers of group O donors available in an emergency. Grouping at the blood-collection site will be necessary, but the process can be greatly expedited if previous screening has reduced to an insignificant number the group AB, A, and B donors who might appear.

The fact that only about 44% of the population have group O blood considerably limits the total number of available donors. Therefore, as soon as laboratory services for grouping and cross matching blood become available in a bombed city, all groups of blood should be used.

Similarly, Rh typing should be instituted as soon as possible after a bombing. Several days will doubtless elapse before this refinement is possible, but it should be done at the earliest possible time, particularly in view of the certainty of large numbers of multiple transfusions.

ORAL SALT SOLUTION

Research work on the use of large amounts of salt-citrate solution, given by mouth, has indicated a high degree of effectiveness in the treatment of slight to moderately severe burns and shock. Recently, its wide use was strongly recommended by the Surgery Study Section of the U.S. Public Health Service National Institutes of Health.

The solution recommended is made by adding 3 to 4 gm. (about 1 tsp.) of sodium chloride and 2 to 3 gm. (about ½ tsp.) of either sodium citrate or sodium bicarbonate to 1 liter (about 1 qt.) of water. Sodium citrate makes the more palatable mixture.

This is the most practical progress which has been made recently in the development of a simple treatment for burns and shock. It is not, of course, a substitute for whole blood, any more than plasma or serum albumin is. The method may, in the future, materially reduce the need for blood plasma but not for whole blood. The availability and ease of administration of this oral solution make it particularly useful under disaster conditions.

EMERGENCY LIFESAVING SUPPLIES

The following is a list of the minimum supplies which are needed for first-aid and lifesaving procedures for 1,000 casualties during the first week after an atomic bomb disaster, as compiled by the Office of Medical Services of the Office of the Secretary of Defense and the three medical departments of the Department of Defense. The list is based on 1,000 casualties, so that multiplications or divisions may readily be made on a decimal-system basis.

The cost of these supplies for 1,000 casualties is estimated to be $21,125. This list does not include blankets.

Morphine and other narcotics will be stocked separately.

ESTIMATED SUPPLIES

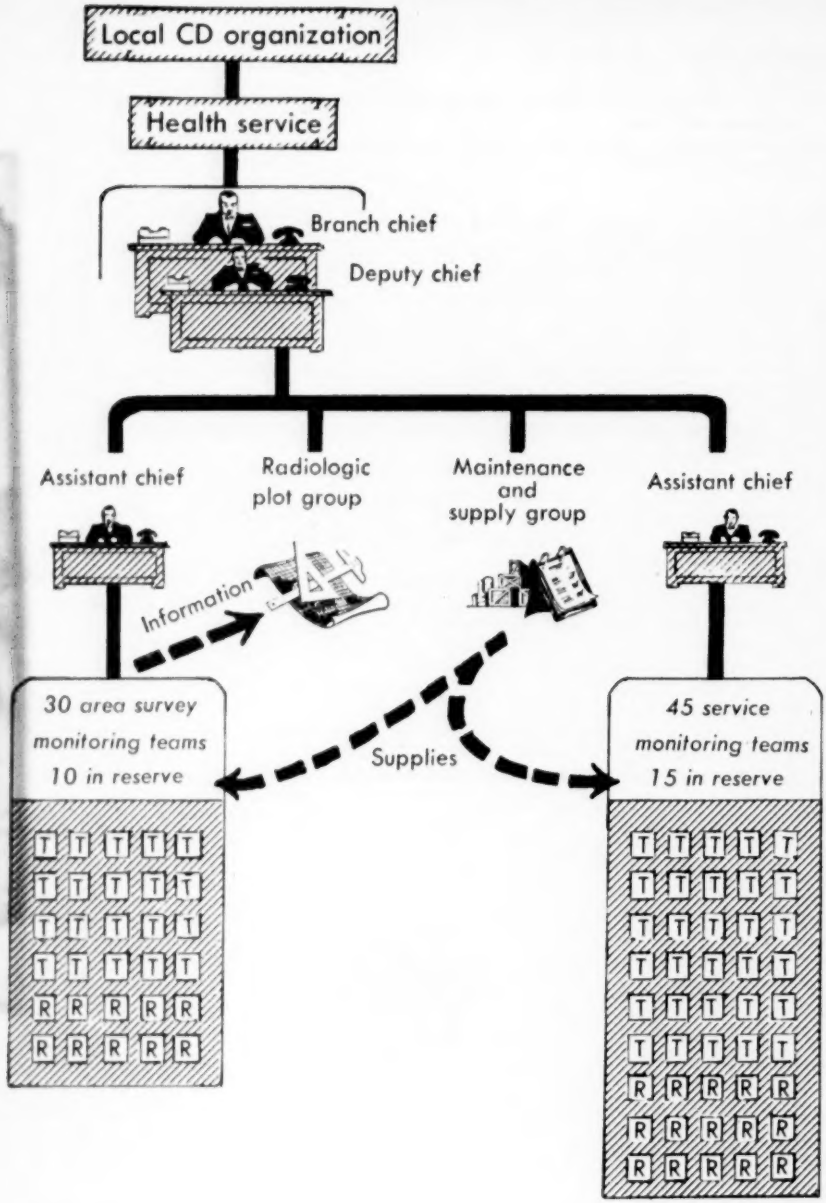
Part I	*Recommended quantity*
Pentothal sodium ampules, 1 gm.—25's, with 50-cc. ampules of water	12
Barbiturates, according to duration of action	
Short, 0.1 gm. (1½ gr.) 500's	15
Short, 0.2 gm. (3 gr.) 500's	3
Intermediate 0.115 gm. (1¾ gr.) 500's	
Intermediate 0.24 gm. (3½ gr.) 500's	
Duration of action is according to the "New and Nonofficial Remedies" classification. Typical examples of short-action barbiturates are amytal, pentobarbital, seconal, etc. Examples of intermediate-acting barbiturates are alurate, ipral, dial, etc.	
Sulfadiazine tablets, 0.5 gm. (7½ gr.) 1,000's	60
Benzalkonium chloride solution, concentrate, 10%, 4 oz.	12
Benzalkonium chloride tincture, concentrate, 10%, 4 oz.	12
Aureomycin hydrochloride, 0.25 gm. (4 gr.) 100's	12
Ether, ¼ lb.	200
Chloramphenicol, 0.25 gm. (4 gr.) 100's (Chloromycetin)	30
Morphine, syrettes or tablets, ¼ gr.	3,000
Streptomycin, 1 gm.	400
Penicillin, crystalline, 200,000 units	15,000
Bandage, cotton, elastic, 3 in. by 5½ yd., 12's	140
Bandage, cotton, elastic, 6 in. by 5½ yd., 12's	140
Bandage, gauze, roller, 2 in. by 6 yd., 12's	20
Bandage, gauze, roller, 3 in. by 10 yd., 12's	96
Bandage, gauze, roller, 4 in. by 10 yd., 12's	120
Bandage, muslin, triangular, compressed, 37 by 37 by 52 in.	500
Bandage, plaster of paris, 3 in. by 5 yd., 12's	100
Bandage, plaster of paris, 6 in. by 5 yd., 12's	50
Cellulose, absorbent, 2 lb.	150
Dressing, first aid, large	1,000
Dressing, first aid, medium	800
Dressing, first aid, small	1,152
Gauze, plain, 36 in. by 5 yd.	14
Gauze, plain, 36 in. by 25 yd.	12
Gauze, plain, 36 in. by 100 yd.	21
Gauze, plain, compressed, 36 in. by 1 yd.	25
Plaster, adhesive, surgical, 3 in. by 5 yd.	100
Plaster, adhesive, surgical, 12 in. by 10 yd.	24
Sponge, surgical, 2 by 2 in., 100's	50
Sponge, surgical, 4 by 4 in., 200's	100
Sponge, surgical, 4 by 8 in., 100's	50
Stockinet, 3 in. by 25 yd.	6
Stockinet, 6 in. by 25 yd.	6
Stockinet, 10 in. by 25 yd.	12
Wadding, sheet, cotton, 5 in. by 6 yd., 12's	50
Buckle, splint webbing, 1 in., 144's	1
Buckle, splint webbing, 1½ in., 144's	1
Needle, hypodermic, 20-gauge, 1½ inch, 12's	50
Syringe, 30-cc. glass, Luer slip, graduated to 1-cc. metal adapter	12
Syringe, Luer, 10 cc.	75
Splint, leg, half ring, Thomas	102
Splint, support and foot rest, improved	100
Splint, wire ladder, 3½ by 31 in.	300
Webbing, splint, 1 in. (1 yd.)	100

	Recommended quantity
Webbing, splint, 1½ in. (1 yd.)	100
Litter, straight, military type	50
Cellulose dressing, gauze facing, medium *(new item to be developed for the treatment of burns)*	1,200
Cellulose dressing, gauze facing, large *(new item to be developed for the treatment of burns)*	600

Part II

25 sets of instruments for first aid, containing the following choices:	
Forceps, tissue, smooth, 5½	1
Forceps, tissue, 1 by 2 teeth, 5½	1
Forceps, dress straight Cushing	4
Forceps, hemostatic straight Kelly, 5½	6
Forceps, hemostatic curved	6
Forceps, tongue holding, 7 in.	1
Holder, needle, Hegar-Mayo, 7-in.	2
Blade, operating knife, No. 10, 6's, package	2
Blade, operating knife, No. 12, 6's, package	2
Handle, operating knife, No. 3	4
Needle, hypodermic, 20-gauge, 1½ in., 12's, box	1
Needle, suture, catgut, Mayo, 1-2c tap., size 1, 6's, package	4
Needle, suture, catgut, Mayo, 1-2c tap., size 2, 6's, package	4
Needle, suture, catgut, Mayo, 1-2c tap., size 3, 6's, package	4
Needle, suture, catgut, Mayo, 1-2c tap., size 4, 6's, package	4
Scissors, bandage, Lister, 7¼ in.	6
Scissors, dissecting, curved Mayo, 5½ in.	4
Scissors, dissecting, straight Mayo, 5½ in.	4
Suture, cotton, size 0, 100 yd., spool	12
Suture, cotton, size 1, 100 yd., spool	12
Suture, silk, braided, size 1, 25 yd., spool	12
Suture, silk, braided, size 0, 25 yd., spool	12
Syringe, Luer, 10 cc., each	3
Tube, breathing (airway), hard rubber or metal (adult)	1
Tube, breathing, hard rubber or metal (child)	1
Retractor, general operating, nested, 1 8¼ and 1 8½, set	1

Local Organization for Radiologic Monitoring



Monitoring for Radioactivity

DEFENSE against residual radioactivity that may follow an atomic explosion requires a special organization for which there is no peacetime counterpart. Some radioactive contamination should be assumed following any atomic explosion.

Measurement of any suspected residual radiation remaining in areas and on structures and equipment after an atomic explosion must be made as soon as possible, because of the variations in residual contamination. Accurate information on the degree of contamination would be needed for the guidance of fire fighters, rescue teams, and other civil defense workers and to reassure and guide the general public. However, serious hazards to public safety, such as fires, should not be neglected pending completion of the monitoring.

TRAINING MONITORS

All cities within critical target and supporting areas should develop a radiologic defense service. The degree of organization will depend on whether the community is a principal city, is within a mutual aid area, or is within mobile support distance.

Radiologic defense for civil defense purposes is the application of health physics principles to the problems of protecting the civil population from the possible harmful effects of exposure to the residual contamination that may follow an atomic attack. Radiologic defense has one fundamental purpose—to detect, evaluate, measure, and take proper action against radiologic hazards.

To accomplish this, the radiologic defense organization must be trained and equipped to make a thorough and prompt radiation survey of the entire area that may be contaminated. The data gained must be quickly assembled and evaluated; information about areas with contamination high enough to be hazardous must be sent promptly to the various public and civil defense services. In this way, possible injuries from exposure to contamination can be prevented or mitigated. Civil defense duties can be carried out safely, even though those duties might take personnel into radioactive areas. Above all, the radiologic defense organization may prevent or minimize public confusion and apprehension by making available factual information about radiologic hazards.

Adequately trained monitoring teams of nonmedical persons should be formed as the backbone of the radiologic defense organization. The responsibility of such teams should be limited to area surveys and assistance to other municipal civil defense services.

Potentially hazardous areas would be detected and marked by radiologic defense workers; people would be evacuated from the area if necessary and the public restrained from

entering until it was entirely safe. It probably would be safe for civil defense personnel to work within most areas for variable periods of time which would be determined by the radiologic defense service.

SPECIALIST TEAMS

Specialist teams will be needed for more complicated technical problems of analysis, measurement, and evaluation of radioactivity including food and water analysis.

Medical advisers for radiologic defense are needed to interpret the data supplied by monitors and to relate it to probable hazards to civil defense personnel. A small group of specially qualified physicians must be given detailed training in radiologic defense operations and in the toxicology of internal radiation hazards. All questions on permissible levels of radiation for civil defense personnel should be referred to these medical experts.

RADIOLOGIC DECONTAMINATION

Decontamination, as used in radiologic defense, means the removal of the radioactive materials from the person, substance, or object contaminated. The rate of decay of the radioactive elements is not changed by any decontamination process used.

Hazards in performing decontamination can be controlled. Care and common sense application of existing methods are the only requirements. Three basic procedures should be used:

1] *Surface decontamination methods,* which reduce contamination without destroying the utility of the object or area.

2] *Aging,* which allows the object or area to "cool" by natural decay or weathering followed by sealing the residual contamination into the surface.

3] *Disposal operations,* which clear the area by demolition, concentration, or removal of contaminated objects.

Methods applicable to surface decontamination include the use of vacuum-cleaning apparatus, water, steam, detergents, complexing agents, organic solvents, inorganic acids, acid mixtures, caustics, and abrasion. The first three remove only loosely held contamination. Tightly bound contamination may be removed by detergents or complexing agents, but these do not appreciably attack the surface material. The last five methods remove outer layers of materials along with contamination.

Aging and sealing procedures are primarily designed to prevent dispersion by fixing residual alpha contamination to the surface after beta and gamma radiation have either been removed or have been allowed to weather to a nonhazardous level.

Because radiologic defense must operate locally, with local people, the plan and organization must be the responsibility of each community. The chief radiologic hazard is to persons, and since many of the problems of radiologic defense are medical in nature, civil defense radiologic defense activities should be organized as an integral part of the civil defense health services.

Because of the highly technical nature of radiologic defense services,

maximum use should be made of individuals working in the field of nuclear energy within each state and city. Such persons should be used as members of a technical advisory committee, as well as for operations and training.

Radiologic defense teams must be highly mobile, and arrangements for transporting the teams and equipment should therefore be made with the civil defense transportation service.

COMPONENT GROUPS

The principal radiologic defense service in a critical target area would probably contain the following components:

Headquarters group—This group should consist of the radiologic defense chief, a deputy chief, 2 or more assistants, and clerical personnel as required. The chief would be responsible for the technical direction of all radiologic defense operations, and for advising other civil defense services on radiologic problems.

Radiologic plot group—This group should consist of persons with responsibility for developing and maintaining operational maps and charts showing the boundaries and intensities of dangerous radioactive areas. In time of disaster this group would provide the civil defense director with up-to-the-minute information concerning the extent and severity of radiologic contamination reported by the monitors.

Maintenance and supply group—The supply group should consist of persons responsible for storing, issuing, and maintaining equipment used by the radiologic defense service. Accurate records must be maintained on all personnel dosimeter or cumulative dosage indicators as to hour of issue, name of individual, date and hour of return, and dosage registered. This information should be made available to the health staff and be subject to their rules and regulations as to maximum dosage and medical diagnosis.

Monitoring teams—A large number of 6-man teams would be needed to measure the radiation hazards following an atomic attack.

The key person in each team is, of course, the leading monitor, who should be trained in monitoring technics and evaluation.

Protection of Water Supply

Basic considerations involved in the supply of water to a community, whether in normal times or in disaster, are quantity and safety. These two factors are, of course, interrelated.

QUANTITY OF WATER

The pressing need for large volumes of water for fire fighting, regardless of source, must be recognized in civil defense planning. Contaminated water from available surface sources, lakes, rivers, canals, or even sewers may be pumped into the distribution system to meet urgent fire-fighting demands.

To guard the public health against hazards resulting from such pumpage, plans must be made to isolate that part of the system which may carry contaminated water.

Disinfection of emergency fire supplies from unsafe sources pumped through the distribution system may not always be possible or practicable. In all cases the distribution system should be disinfected before returned to normal use. The procedure recommended by the American Water Works Association should be followed in chlorinating contaminated mains.

Evaluation of minimum demands for water in case of an emergency should be made in a cooperative study by waterworks and health officials. The study also should determine the adequacy of interconnections and the necessity for strengthening weak points in the distribution systems.

One gallon of potable water per day per person is a minimum requirement. All cities have important secondary sources of water that can be used to meet drinking, culinary, and other domestic needs. Such resources include wells used for air-conditioning systems, swimming pools, breweries, milk plants, and other industrial establishments. The capacity and quality of such supplies should be known and their availability in the absence of public power be assessed. Auxiliary supplies used primarily for fire fighting should not be used by the public for domestic purposes unless proper public health precautions are rigidly exercised.

The study of auxiliary water supplies should include a survey of available tank trucks. Trucks to be used for the transport of potable water should be cleaned in accordance with a process approved by the local health authority.

QUALITY OF WATER

All water for domestic use should be disinfected. Hypochlorites (for example HTH, perchloron, chloride of lime, halazone) or other disinfectants may be used for small quantities of drinking water. Because of the possible difficulty of detecting and correcting contamination after

a disaster, the public should be advised to boil all drinking water until notified to the contrary.

Fire fighters must be fully informed of the dangers of drinking the water pumped from emergency sources. This hazard was amply demonstrated by the disease outbreak which occurred in the Chicago Fire Department following the stockyards fire of the 1930's.

Contamination of the public water supply may follow bombing attacks because of breaks in water mains and sewers, pumping from unsafe sources into the system for fire-fighting purposes, and back-siphonage from building fixtures due to reduced, zero, or negative pressures in water mains.

Contamination from breaks in sewers and from back-siphonage is extremely difficult to detect. Therefore, the chlorination rate should be increased so that a residual of 1 part per million free chlorine after fifteen minutes of contact is maintained throughout the system. Plans should be made for increasing the chlorination when the warning signal is sounded. In the event of false alarms, the chlorination rate can be returned to normal at the "all-clear."

Sensitive control of chlorination throughout a large distribution system may necessitate additional chlorination stations. Auxiliary chlorination stations should be kept ready to operate immediately.

Preparatory work also includes a survey and inventory of all extra water disinfecting equipment, including replacement parts, in the area. This extra equipment should be kept ready for use. Many state health departments have portable emergency chlorinators. Since these are frequently used for a variety of purposes, specific plans would have to be made to insure their availability in case of disaster.

CONTAMINATION BY SABOTAGE

Willful contamination of water by sabotage or direct enemy action is a possibility. Chemical poisons, bacteria or their toxins, viruses, and radioactive materials may be introduced into either reservoirs or the distribution system.

Detection of contamination introduced as a result of sabotage is difficult. The first sign may be a flurry of cases of fever, diarrhea, nausea, or vomiting. For this reason, plans should be developed for an effective local epidemiologic intelligence service so that civil defense health authorities will be notified promptly of incipient outbreaks that might be water-borne.

Although routine bacteriologic examinations are slow in producing evidence of water contamination, nevertheless they are important factors in any program for protection against willful contamination. Daily, or more frequent, samples should be collected from key points in the distribution system, and any evidence of change from the usual bacteriologic history should be cause for immediate investigation.

Rapid colorimetric tests for chemical poisons of various types are available and should be understood by laboratory and sampling personnel. Radioactive contamination of water is discussed later.

Plans must be made locally to

act promptly if the public water supply is found to be contaminated. Against bacteria and viruses, stepped-up chlorine dosage will be a necessary measure.

Even though previous announcements recommended boiling of drinking water by the public, the health officer should reissue orders to boil all drinking water if evidence of any biologic contamination is discovered.

In case of serious chemical contamination, other sources of water for domestic purposes should be made available until the poison either is eliminated from the distribution system or becomes so dilute as to no longer be a hazard.

WORK PROGRAM

The public phase of the water supply program may be outlined as follows:

Predisaster preparations

- Coordinate the organization and training programs with those of other civil defense officials to insure adequate training in emergency anticontamination measures.
- Review modifications planned for existing waterworks to insure the inclusion of anticontamination measures, specifically the installation of emergency disinfecting equipment.
- Review modifications in waterworks operations practices to insure maintenance of adequate free chlorine residuals. Such a review should include additions and practical changes in laboratory technics and practices as safeguards against sabotage or other attack on water supplies.
- Develop improved measures against biologic, chemical, and radioactive contamination.
- Request the civil defense transportation service to survey mobile equipment that could be used to transport anticontamination devices, equipment, and personnel.
- Survey all extra disinfecting equipment available and make plans for maintaining it in good repair.

Disaster relief operations

- Insure maintenance of a safe public water supply, involving increased use of disinfectants at regular disinfecting stations, activation of emergency stations, use of portable disinfecting equipment, and the like.
- Insure the bacteriologic safety of water hauled to hospitals, emergency feeding centers, first-aid stations, and other sites where emergency water will be required.

PERSONNEL

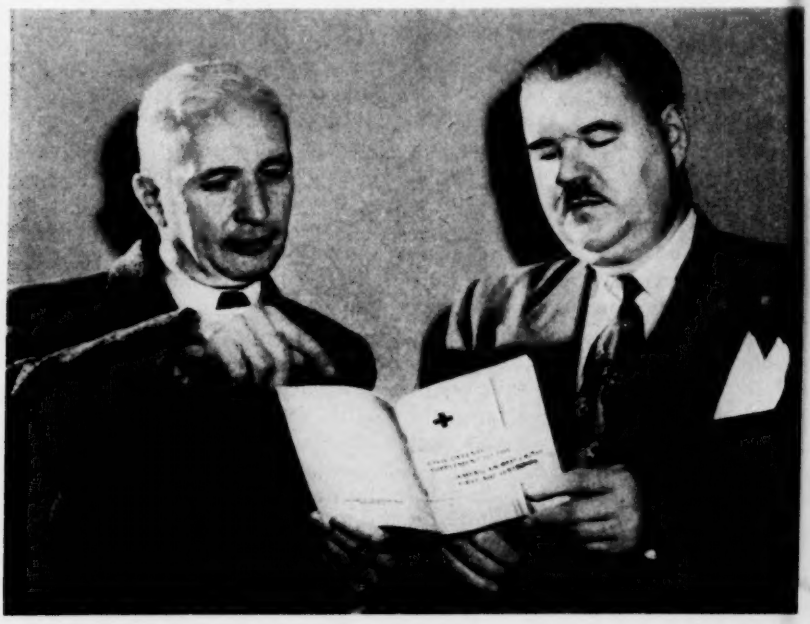
Anticontamination measures can be conducted by water department staffs. These should include testing for contamination of all types followed by the proper treatment methods. Because of the comparatively small numbers of sanitation experts, special attention should be given to planning for the prompt loan of sanitary engineers and trained sanitarians from undamaged communities.

To supplement the permanent staff and to provide special emergency services, such as latrine policing, sanitary supervision at mass feeding centers, or sample collecting, volunteer or part-time workers should be trained in advance from

population groups that will not be otherwise engaged in civil defense or military activities.

Many companies in the food preparation and service industries have employees with certain types of sanitation experience. Pest control, septic tank cleaning, building and maintenance firms also have useful personnel. Many of these firms have equipment and supplies needed for sanitation services. Housewives without young children, schoolteachers, and others, especially persons with some education in the chemical or biologic sciences, also are good candidates for training in sanitation and anticontamination measures.

Red Cross Releases Civil Defense Training Supplement



LATEST INFORMATION on how to give emergency care to atomic casualties is provided in the supplement, issued last month, to the American Red Cross First Aid and Home Nursing textbooks. The supplement outlines injuries which would follow an atom bomb attack and presents the best methods of giving the casualties emergency care. Initially, two million copies are being distributed. Dr. Carl Potthoff, left, National Director of the American Red Cross, discusses the booklet with Dr. Norvin C. Kiefer, Director, Health Services and Special Weapons Defense Division of the Federal Civil Defense Administration.

Hazard of Gas Attacks

CHEMICAL warfare on civilians would produce defense problems unlike those of either atomic or biologic warfare defense. The most likely chemical weapon—nerve gas—acts quickly, is detected with difficulty, may cause death in a few minutes, and does not affect large areas.

Nerve gas was developed in Germany in World War II. The term does not refer to various other chemicals often described in chemical warfare literature as nerve poison or nerve gas and which include hydrogen cyanide, carbon monoxide, some fluorophosphates and fluoroacetates, and the like.

The nerve gases are more toxic than any previously known war gases and are nearly colorless and odorless. They are liquids which yield toxic vapors upon evaporation. Since most of the chemical will be laid on or near the ground in warfare, the highest concentration will be near the ground.

The nerve gases are hydrolyzed slowly by water, more rapidly by strong alkali. The resulting hydrolysis products are less toxic than the original nerve gas. Some of the nerve gases are persistent; others are relatively nonpersistent. They may be absorbed into the body by inhalation, through the skin and mucous membranes, such as those of the eye, and through the gastrointestinal tract by swallowing saliva contaminated with the material.

Nerve gases inhibit cholinesterase, which destroys acetylcholine. Acetylcholine, if not destroyed at a proper rate, overstimulates the parasympathetic nerve endings which control such vital functions as respiration and circulation.

NERVE GAS SYMPTOMS

The symptoms produced by nerve gas depend upon the amount absorbed.

The toxic action of the gas is prompt and, in contrast to the irritant war gases, has no latent period. The inhalation of a sufficiently high concentration for a few seconds may cause death.

Exposure to traces of the vapor causes constriction of the pupils in a few minutes, usually accompanied by slight intermittent bronchoconstriction. The constriction lasts only a few days and is readily relieved by atropine.

A slightly greater exposure induces painful constriction of the pupils and spasm of the ciliary muscles of the eye. Often, a moderately painful sensitivity to bright light occurs.

The inhalation of large amounts of vapor or absorption of the liquid gas by other routes causes rapid and severe bronchospasm. The victim becomes confused and cyanotic, may be nauseated and start vomiting, and is soon unconscious. Blood pressure falls to shock levels. The heart beat

slows and may be arrested temporarily or permanently.

Large doses of nerve gases may also produce involuntary contraction of muscle fibers, muscle bundles, and entire muscles, finally producing epileptiform convulsions. In severe cases, profuse salivation, intestinal hypermotility, cramps, and incontinence of the bladder and bowels may result.

Persons with slight nerve gas poisoning may have giddiness, tension, anxiety, insomnia, and excessive dreaming. Depression, restlessness, tremor, emotional instability, and irrational behavior may occur after a more severe exposure.

Nerve gas poisoning causes no significant gross or microscopic pathologic changes except those associated with pulmonary edema or secondary to convulsions or anoxia. Laboratory findings are essentially normal except that the cholinesterase level of the blood and plasma may be greatly reduced.

PRELIMINARY TREATMENT

Nerve gas patients must be kept at absolute rest after being rescued from the gas area. Any contaminated garments are removed at once and left outdoors.

The skin is cleaned of adherent gas or fluid by thorough washing with alkaline solutions, such as a 5 to 10% solution of sodium carbonate or ammonia water, or, if these are not available, with soap and water.

However, rubbing of the dry skin must be carefully avoided, since this enhances the absorption of nerve gas. The patient must not be transferred to closed quarters until he is thoroughly decontaminated.

The toxic symptoms of nerve gas poisoning are to a large extent promptly counteracted by atropine. Large doses are required in severe cases and undertreatment must be avoided. Atropine sulfate, 2 mg., is given immediately, preferably by intravenous injection. Intramuscular injection may be used if the patient is not cold or in shock. Absorption from the subcutaneous or oral route is too slow for initial treatment. The injection is repeated every five to ten minutes until three injections, 6 mg., have been given or cardiorespiratory symptoms are relieved. Thereafter smaller doses may be given by mouth or injection every few hours for several days until the patient is symptom free. Morphine should not be administered to these patients.

If the circulation is greatly impaired, atropine should be given intravenously. However, atropine may produce ventricular fibrillation in persons with prolonged and profound anoxia. In such cases, the atropine must be withheld until the lungs have been ventilated and the heart has largely recovered from the oxygen lack.

ARTIFICIAL RESPIRATION

If the respiration is sufficiently impaired, artificial respiration is indicated. Usual manual methods, such as the Eve or Schafer, are ineffective since the respiratory muscles of the chest and diaphragm are paralyzed by the gas.

The Emerson method of manual artificial respiration may give com-

paratively good results, especially since it permits a certain amount of drainage from the respiratory tract. With this method, the hips are lifted 10 to 12 in. and lowered with the patient in the prone position. Spontaneous respiration may not return until forty-five minutes or more of artificial respiration.

FURTHER MEDICAL THERAPY

Convulsions may be alleviated by sodium thiopental, trimethadione (Tridione), or ether anesthesia. Excess of thiopental or other barbiturates must be avoided because these agents act synergistically with the nerve gas in depressing the respiration. The intravenous administration of Tridione in doses of 1 gm. as a 20% solution every fifteen minutes to a maximum of 6 gm. depresses cortical activity effectively without depressing respiration.

The constriction of the pupils and the spasm of the ciliary muscles may not respond to the atropine injections. In slight cases, instillation of homatropine or atropine into the conjunctival sac may give relief. In more severe cases, atropine solution should be given until the pupils dilate. This treatment may have to be repeated several times because the condition frequently recurs.

PROTECTIVE MEASURES

Certain types of gas masks protect the eyes, respiratory tract, and mouth from access by nerve gases in either vapor or spray form. The proper fitting of gas masks and their maintenance require very considerable effort and training.

If the gas is of a persistent type, impermeable clothes, including boots and gloves, are useful. Against nonpersistent nerve gases such clothing is not required. A certain amount of protection may be secured by breathing through a handkerchief or towel saturated with an alkaline solution, such as an aqueous solution of baking soda or soapy water.

CONTAMINATION

Nerve gases may dangerously contaminate exposed foods of high water or fat content, including milk. Dry foods, such as sugar or flour, are relatively little affected. Foods in airtight packages are not contaminated by nerve gas vapors, but only foods kept in sealed glass or metal containers are safe from liquid nerve gas. Cooking assists in decomposition of the gas.

In general, bodies of water such as reservoirs or lakes are too large to be significantly contaminated by exposure to nerve gas vapors. Liquid nerve gas, however, may cause dangerous and persistent contamination of water.

GENERAL CONSIDERATIONS

Nerve gases will be used only in large cities or strategic areas. Such exposures last for only a few minutes if nonpersistent nerve gas is encountered, but persistent nerve gas may dangerously contaminate an area for several hours to several days. The number of persons exposed to the effects of a single nerve gas bomb would be principally determined by density of the population, the size of the bomb or carrier, the prevailing winds and their velo-

city, the persistency of the gas, the time of day, and whether adequate warning is possible. Unprotected persons over ½ mile from the source would undoubtedly not be seriously affected. Since in a given area the intensity of the exposure would vary considerably, probably not more than 50% in the area might be seriously affected.

Adequate amounts of atropine in a readily dispensable form should be available, as well as sodium-thiopental, trimethadione, or ether for treatment of convulsions, which might occur in approximately 10 to 15% of the affected persons.

Atropine or homatropine should be available for eye instillation.

Atropine is too dangerous a drug to be placed in the hands of a large section of the population or to be used indiscriminately. However, laymen can be taught to give the injections.

In view of the relatively short period of action of nonpersistent nerve gases, mass evacuation of the attacked population is not practicable. People should be removed from areas contaminated by persistent types of nerve gases until tests prove the area to be free of contamination.

Emergency Feeding in Target Areas

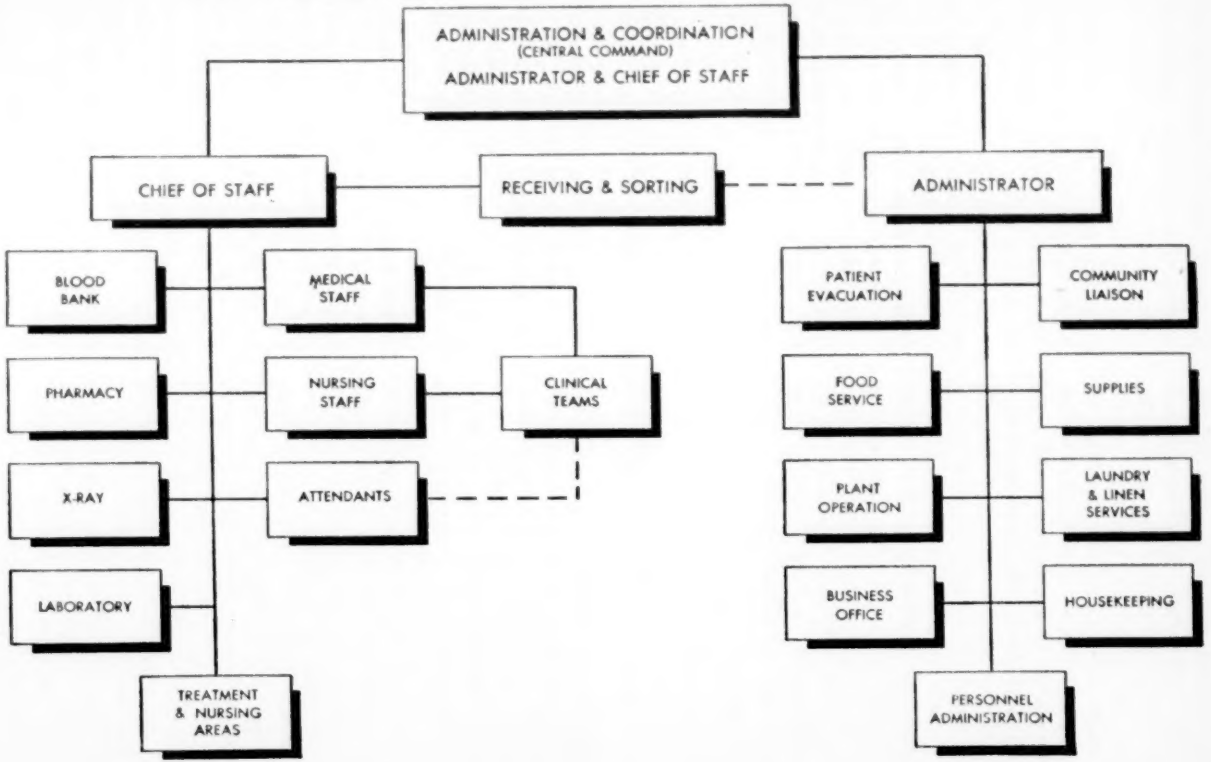
When planning an emergency feeding program, provision should be made to meet minimum needs only, since many families with intact homes would have on hand two or three days' supply of food and other families whose homes might be temporarily or permanently uninhabitable would be relocated, within a few days, in areas where they could procure food.

Civil defense is concerned with temporary feeding only. A prompt and effective relocation program makes plans for prolonged mass feeding unnecessary.

For emergency feeding, the foods provided for normal healthy persons during the first week should be designed only to allay hunger and maintain morale. Foods recommended for this purpose should be cheap, easily prepared and served, and, when possible, of the kind to which the population is accustomed. Foods in good supply locally should be given preference. At least one item on the menu should be served hot for stimulating and psychologic effect.

The chief of the nutrition service is responsible for devising standards for the types and amounts of food to be maintained in reserve stocks for emergency use. The foods should be nonperishable, canned or in waterproof bags, and of high caloric value per unit of storage space. They should require a minimum of preparation. They should require no refrigeration in storage and should be acceptable to the average housewife. Provision should be made for periodic turnover of foods subject to slow deterioration in storage.

Channels of Hospital Authority During Disaster



Leadership and Training

While final responsibility for the direction of civil defense health services should be placed in the hands of public health authorities under the direction of the civil defense director, operation of the civil defense health services will depend largely on the cooperation and leadership of volunteers from the various health professions.

The professional manpower needed for the operation of the health services must come from private ranks.

In view of this, the full cooperation and support of the various state, county, and local medical and related professional groups is essential. Once the support of these groups is enlisted, their officers and leaders should assume definite civil defense responsibilities. The service traditions of the medical and other health professions leave little doubt that these responsibilities will be accepted willingly.

Detailed mobilization and operational plans should be made so that each person in the organization knows his exact duties in an emergency. Administrative authority must be clearly defined to assure discipline and efficient execution of operational plans.

Casualties among defense personnel may be high and should be anticipated by provision for succession of authority at all levels of operation.

FEDERAL COOPERATION

Federal plans for civil defense health services have been developed with the cooperation and assistance of competent government agencies in health, medical, and related fields. The federal agency most concerned with health services for civilians is the U. S. Public Health Service. Until federal regional civil defense offices have been established and staffed, Public Health Service regional offices, part of the Federal Security Agency regional offices, will be asked by the Federal Civil Defense Administration to provide technical assistance to states in formulating, revising, and maintaining civil defense health service plans.

The state health commissioner generally should be appointed head of the state civil defense health service under the state civil defense director. Local civil defense health service directors are responsible for making and implementing plans under the direction of the local director of civil defense. They have the chief responsibility for supervising actual services and professional and technical personnel in time of disaster.

TRAINING PROGRAMS

Success in meeting an atomic attack and saving many lives depends largely upon a sound training program in civil defense health services. Persons in the local areas who take part in

civil defense health services will be trained through hospital staff meetings and local medical, dental, nursing, and similar professional organization meetings. These have the additional advantage of affording instructions to hospital interns and residents.

In addition to acquainting the professional personnel with the problems imposed by atomic warfare, training should aim at enabling lay persons to take over specific functions of the doctor.

Time may be utilized effectively for training in procedures which can be employed for treating minor illnesses occurring in a time of national emergency when the services of a physician are difficult to obtain.

Teaching of this type may remove some of the day-to-day wartime strain on an overburdened medical profession, as well as give instruction in the immediate care of casualties.

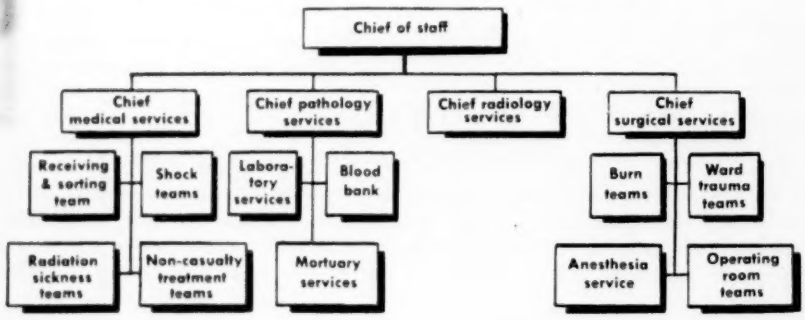
LABORATORY PROCEDURES

In the event of disaster, the load placed upon medical laboratories would far exceed the capacities of the permanent staffs. A large number of auxiliary laboratory workers should be trained to conduct red and white blood cell counts, hemoglobin determinations, and chemical and microscopic urinalysis. Auxiliary workers also should be trained to be of assistance to qualified technicians in blood-typing.

In many emergencies, the physician has to assume a calculated risk by exercising his clinical judgment without benefit of laboratory confirmation. No amount of physicians' skill or judgment can be substituted, however, for matching of blood in preparation for transfusion. Emergency laboratory facilities must be so planned that Rh-blood typing and blood cross-matching services can be supplied at the earliest possible moment following a disaster.

In addition to the provision of trained laboratory workers, supplies and equipment—whole laboratories—would have to be provided. Mobile laboratories, each of which can be moved several times daily to serve several local school-building hospitals, should be considered.

Medical Staff Organization for Civil Defense



The Threat of Biologic Warfare

In planning civil defense measures against biologic warfare, the possibilities of both open warfare and sabotage must be considered.

The form of overt biologic warfare most likely to be used is the creation of aerosol clouds of critically sized particles containing aggregates of pathogenic agents over urban areas, other massed populations, or important military targets. These aerosols might be produced by bombs dropped from aircraft or released from submarines approaching port cities or, possibly, through guided missiles.

Biologic warfare agents may be used in an almost infinite variety of fashions. For instance, a saboteur can introduce any of a wide selection of pathogenic agents into the water, food, and milk supplies or into the air of localized but strategically important communities, buildings, or places where people congregate.

The first lines of defense against either of these forms of biologic warfare are the military forces and the FBI, but neither can guarantee absolute protection against the delivery of biologic agents.

OPEN BIOLOGIC WARFARE

Civil defense planning against open biologic warfare, largely concerned with detection, protection, and decontamination, may be considered under five headings:

Detection—The basic method for detection of an aerosol cloud is air sampling for microorganisms. Many instruments are available for this purpose, such as impingers, electrostatic precipitators, bubblers, and recently developed filters. Work is being conducted to produce simplified and inexpensive apparatus.

The effectiveness, for direct defensive purposes, of detecting the presence of a cloud of pathogenic agents will vary with the incubation period of the disease. Many of the potential disease agents can be identified in two to five days. A strong presumptive diagnosis for some is possible within twenty-four hours. For several potential biologic warfare agents with long incubation periods, detection should give ample warning and lead to effective control measures, such as mass treatment of the exposed population with drugs or antibiotics.

If the incubation period is shorter than the time necessary for identification, the first recognition that a biologic warfare attack has occurred probably would be definite cases of disease. Even if the incubation period for the specific agent is short, an effective detection grid will provide necessary information as to the distribution and concentration of the agent. This, in turn, will serve as a necessary basis for planning improved defense.

A detection grid is any system of detection devices that collects or

provides the necessary information on the probable presence of a disease agent. The staffs of collection grids for detection work need not be limited to professional workers. Nonprofessional volunteers can be trained for much of the routine work.

Special training in laboratory recognition and identification of biologic warfare agents is necessary and will be provided for selected state and local health department personnel. Persons receiving the training will be of great value in the early laboratory work performed after a suspected attack. They cannot, however, be expected to maintain competence in the laboratory identification of all potential biologic warfare agents. Provision must be made, therefore, for use of regional and, in some instances, state laboratories with skilled personnel and the equipment and supplies necessary for special tests. Rapid air shipment of specimens to these laboratories must be arranged.

All laboratory personnel with responsibilities for biologic work should know the location of the various regional state and local laboratories and the kinds of tests each of these laboratories can perform. Personnel must be provided with complete instructions for all the various collection, shipping, and notification technics in biologic warfare defense.

Epidemic intelligence—The reporting of cases of disease caused by biologic warfare attack may be based upon the routine morbidity reporting mechanisms maintained by existing health agencies. Although the information would come primarily from physicians, hospitals, and diagnostic laboratories in the community, supplementary reporting from wardens might be valuable to list the names of persons ill in their territories and develop carefully planned studies of absenteeism from industries and schools.

Personal protection—Active immunization offers by far the most effective form of civil defense against biologic agents for which vaccines are available. Among these are botulinus toxoids for types A and B toxins, and smallpox vaccines. Vaccines which are only partially effective may also be valuable for wide use to reduce the incidence of disease from a specific biologic agent or reduce the duration, fatality rate, or degree of disability of those cases of disease which occur. Examples are vaccines for tularemia, plague, typhus fever, Q fever, yellow fever, cholera, and, possibly, psittacosis and brucellosis.

Immunization of the entire population against all these agents is not practical. Rather, the civil defense organization in each community should be prepared to conduct a rapid immunization program when advised to do so by state and federal civil defense authorities, which would be responsible for providing the vaccines and detailed instructions for each immunization program.

Detailed plans for rapid mass immunization programs should be carefully developed by the civil defense health service of each critical target area. Assistance from nearby communities and from the state agency also should be arranged.

Collective protection—All air-raid shelters should be designed so that adequate filters can be installed. Protection against chemical warfare agents and the entrance of radioactive particles also should be considered, as well as the advisability of installing such filters in the air-conditioning systems of public buildings or industrial plants, particularly in critical target areas. In most cases, filters already in use in air-conditioning systems are not entirely suitable.

Decontamination—Some potential biologic warfare agents may contaminate the ground and the surfaces or interiors of buildings and be a continuing hazard to disaster workers. Prompt analysis of the type of attack should indicate the likelihood of such a danger. Decontamination measures should be carried out by the sanitation service.

A simple and reasonably adequate procedure for decontaminating the ground and external surfaces of buildings is flushing with a fire hose. In selected instances, hypochlorite solution or other readily available and cheap disinfectants might be used effectively. For indoor decontamination, washing of walls and floors and airing and sunning of rugs, draperies, and furniture are the simplest procedures.

BIOLOGIC SABOTAGE

The enemy might use biologic warfare agents through sabotage or subversive activities either to neutralize strategic industries, communications, and critical utilities or to disrupt high level administrative services by incapacitating key personnel. Sabotage attacks might also be used to undermine national morale by demonstrating that the enemy was boring from within.

Prevention—Sabotage would probably be sharply localized and be coordinated with a complete war strategy plan. Routine detection procedures cannot cope with such incidents.

The best defense—other than internal security measures—against this form of warfare would be to expand and maintain rigid safeguards for water and food supplies, employing, for example, frequent analysis of water samples for bacterial content and chlorine residuals. The expansion of normal sanitation practices should be encouraged.

Epidemic intelligence—If biologic warfare attacks by enemy saboteurs occur in spite of defensive efforts, a complete, prompt, and highly competent epidemic investigation will be needed immediately so that all the conditions leading to the epidemic can be accurately defined. Clues may thus be provided to aid in tracing down the saboteurs.

An epidemic intelligence service should be provided through existing epidemiologic services in state health departments. At the present time the number of trained epidemiologists in the country is grossly inadequate. Mobile teams of qualified epidemiologists, engineers, veterinarians, nurses, and other professional workers should be available to aid in epidemic investigations anywhere in the country at all times. Leadership in promoting epidemic intelligence services and in providing training for epidemiologists is an

existing function of the U.S. Public Health Service.

The Federal Civil Defense Administration will arrange through existing government facilities for three chief types of courses of instruction in defense against biologic warfare:

1] Courses for laboratory workers in the use of detection devices and in laboratory recognition and identification of biologic warfare agents.

2] Recruiting and training of epidemiologists in special measures needed against biologic warfare.

3] Orientation courses for administrative personnel of health departments.

A sound morbidity reporting mechanism of maximum efficiency is essential to an effective epidemic intelligence service. The warden system might be used in reporting the occurrence of disease within each area of a city, in the prompt detection of local contamination of water mains by subversive action, and in localizing areas exposed to overt warfare.

An additional method of improving the morbidity reporting mechanism would be the provision for national publication of brief narrative reports, submitted by state health departments, of epidemics and outbreaks of disease, including not only well-recognized diseases but also all types of unusual, bizzare, or ill-defined illness which might occur.

WARFARE AGAINST ANIMALS

Dangerous foreign diseases of animals have not been permitted to gain a foothold in this country. The Bureau of Animal Industry of the U.S. Department of Agriculture administers control measures, which are carried on mainly at ports of entry to prevent the agents causing these diseases from entering and spreading. In this control work, other government agencies also cooperate—the Public Health Service, the Bureau of Customs, and the Bureau of Entomology and Plant Quarantine of the Agriculture Department.

Detection and diagnosis—As a part of field activities, the Bureau of Animal Industry has given special training to groups of veterinarians in the differential diagnosis of dangerous diseases. These men are strategically located throughout the country and are at the call of federal and state livestock sanitary officials when assistance is needed in diagnosing animal diseases.

The basis for eradicating a dangerous foreign animal disease is its prompt detection by ever-alert livestock owners and veterinary practitioners. These men, in most instances, see suspicious conditions first, and by prompt reporting make isolation and eradication of the disease possible before an epidemic becomes widespread.

When a suspicious case is reported either to state livestock sanitary officials or to Bureau of Animal Industry officials, a prompt cooperative investigation is made by trained field veterinarians. If a foreign disease is suspected, trained specialists are called to conduct diagnostic tests. At the same time, the Bureau of Animal Industry in Washington, D.C., is notified, and state officials institute the necessary local quarantine.

If a dangerous disease is found, the Secretary of Agriculture declares an emergency and offers the services

of the federal government to the state to aid in eradicating the disease. Specialists in handling these diseases are rushed from other parts of the country to assist.

WARFARE AGAINST PLANTS

The Department of Agriculture has for many years maintained a foreign plant quarantine service under the Bureau of Entomology and Plant Quarantine. This office is organized to prevent the accidental introduction of insect pests and plant diseases from foreign countries either with commercial shipments of farm and forest products or with the goods brought in by travelers at our various ports of entry. In the event of hostile activity against this country, the possibility of intentional introduction of such pests must be considered.

No quarantine measures can absolutely prevent the introduction of foreign insect pests and plant pathogens. However, during war emergencies, complete inspection should be made of foreign mail, incoming personal baggage and other types of imports, and cargo transported by aircraft, as well as the aircraft themselves. All possible containers of imported cultures of pathogenic organisms should be carefully examined. Cooperation with customs service should be intensified to insure complete inspection of all passengers' baggage at ports of entry.

Detection of plant pests—Prompt discovery of new, injurious insect pests and plant diseases and rapid, exact identification are extremely important. Normally we rely on farmers, county agents, and state and federal agricultural specialists to discover and report crop damage of an unusual nature. If new pests or diseases are thus discovered, their exact identity is determined by Department of Agriculture specialists; federal or state experiment station specialists then mark out the extent of distribution, study the organisms, and establish appropriate control measures.

In the event of biologic warfare, however, new injurious insect pests and diseases might be introduced in large numbers. A joint insect pest and plant disease reporting service would be desirable to insure prompt discovery of new and threatening infestations.

With the help of advisory committees, county agricultural agents and farmers should be advised as to which crops in their respective areas are most essential for national welfare and of the dangers of biologic warfare. By stimulating interest in insect pests and plant diseases, many previously unrecognized invaders would be more likely to be discovered and new outbreaks of known pests and pathogens more apt to be promptly detected.

The Department of Agriculture's plant pest control organization, with the cooperation of its state counterparts, constitutes a substantial standby force which can be called on for prompt action in an emergency. Specific plans are being developed, in cooperation with the Federal Civil Defense Administration, by the Department of Agriculture, with the help of the Department of Defense, to outline methods for immediate and effective countermeasures.

Provision for Special Health Services

In planning for the care of disaster casualties, it must be remembered that the usual nondisaster needs for medical services will still exist. Civil defense health service plans must, therefore, include a well-organized medical service for noncasualty disaster needs. Obviously, physicians and hospitals will regulate admission policies so that medical care during the emergency period is limited to patients in urgent need of treatment.

Maintenance of essential medical and other professional services covers a number of important categories, including:

- Pediatric services
- Obstetric services
- Mental hygiene services
- Dental services
- Nursing services
- Pharmaceutic services

Other special health services that must be planned are:

- Medical services for evacuees
- Medical services for emergency centers

PEDIATRIC SERVICES

Under emergency conditions, most medical services for children cannot be separated from those for adults. To meet the special health and medical needs of children, pediatricians should be represented in any group responsible for the organization of emergency medical services. Close cooperation with the welfare service will be necessary in all planning for children.

Each state has a special program for the care of crippled and handicapped children. In planning statewide emergency medical services, consideration should be given to utilizing personnel from the crippled and handicapped children's programs, whose orthopedic experience would be helpful.

Sudden separation from the mother may be the cause of considerable emotional damage to a child even under favorable conditions. In a disaster situation this damage is greatly exaggerated. The British experience during the past war showed that a child can go through disasters terrifying to the adult without showing severe emotional disturbance as long as he has the assurance of his mother's presence.

Every effort should be made, therefore, to keep children with their mothers. This, in most instances, is likely to be more important than special pediatric care. If the child must be placed in a hospital or other facility for medical care, the mother or other adult member of the family should be allowed to give the nursing care, if possible. This would decrease the damaging effect on the child and lessen the burden on the nursing personnel.

Immunization programs become extremely important during activities that cause increased movement and concentrations of the population. In the event of disaster, immunization

programs would reduce the spread of certain infections. Every effort should be made to have all children immunized against diphtheria and smallpox, and to immunize all young children against whooping cough. Tetanus immunization should be especially emphasized.

EXPECTANT MOTHERS AND INFANTS

Services to protect the immediate health of pregnant women, mothers, and their infants are imperative in the event of disaster.

For purposes of estimating the number of expectant mothers for whom various measures must be considered, the normal annual birth rate may be assumed to be about 2,400 per 100,000 population.

The Hiroshima experience indicates that about 27% of the surviving pregnant women within approximately 2 miles of ground zero may abort or have premature deliveries at the time of a disaster. The effect of bombing upon expectant mothers residing in the outskirts of an area under attack can be estimated in light of reports from Germany, which indicate an increase beyond the normal in the incidence of abortions and premature deliveries. It may be computed, therefore, that over 10% of the pregnant women in the area between 2 and 3 miles from ground zero will have abortions or premature deliveries.

EMERGENCY DELIVERIES

Women who deliver at the scene of disaster will be transferred by first-aid personnel to such facilities as are available.

When regular ambulance services cannot be provided, litters and stretchers should be used for safe movement of women who abort or deliver. Infants need to be warmly wrapped and placed in a basket, carton, or box, for movement with their mothers. Premature infants need special carriers that can be kept warm. Oxygen should be available for administration if needed during transportation. A bulb syringe also should be carried for aspirating mucus.

The evacuation of women who are near term or have such complications as eclampsia should be encouraged in devastated areas.

Supplies and equipment for emergency field obstetrical services include such items as means for transfusions, linens or blankets for mothers and infants, instruments and supplies for the care of the cord, means for identification of infants, medications for infants' eyes, means for aspiration of mucus, supplies for aftercare of women, and oxytocic and chemotherapeutic drugs, antibiotics, and sedatives.

EMERGENCY MATERNITY FACILITIES

In planning for emergency maternal care, it is desirable to make provisions to keep the healthy newborn child at the mother's bedside so that she can feed and help care for her infant. When this is not possible, separate nurseries should be set up.

The number of maternity beds needed, based on 200 deliveries per month, may be estimated at about 40. An additional 40 beds may be figured for women, estimated as 10% of 400, in the seventh and eighth months of pregnancy who may de-

liver prematurely at the time of disaster. This is a total of 80 maternity beds per 100,000 population under disaster conditions.

Arrangements should be made with the welfare service to plan separate shelters or homes for the transfer of women a few days after delivery, if maternity facilities are limited and women cannot return to their homes. These mothers should have their infants and other small children with them. The shelters also could be used as quarters for near-term mothers, and their small children, who can help care for the newly delivered mothers and infants.

All pregnant women should be prepared to help themselves at delivery under disaster conditions if necessary.

FACILITIES FOR INFANT CARE

A nursery should be set aside for the transfer of infants suspected of infectious conditions, and a separate nursery provided for infants with definite diagnosis of infectious conditions. Based on about 200 births per month, about 100 to 110 bassinets, or baskets, for term and premature infants will be needed. This number includes provision for some infants to remain ten days or until able to be returned to their mothers.

Premature infants under 4 lb. need special facilities, such as equipment for resuscitation and aspiration, for the administration of oxygen, for blood transfusions, and administration of intravenous solutions. Premature nurseries might be arranged in connection with emergency maternity facilities, but most efficient use could be made of specially trained professional personnel by planning centers for prematures beyond the probable target area.

MENTAL HEALTH SERVICES

Although some increase in the incidence of psychologic disturbances probably would occur in a civilian wartime disaster, psychotic reactions would not be likely to increase greatly over the normal peacetime rate. The experience in various countries in World War II did not show any great increase in the incidence of such mental disorders.

Psychologic or emotional disorders would occur, perhaps frequently, as a consequence of civilian wartime disasters or in anticipation of them. These reactions probably would be chiefly of the following nature:

Apathy
Agitated, seemingly purposeless behavior
Tension states bordering, in a small percentage of cases, on terror reactions
Psychosomatic disorders

Individuals showing severe psychologic disorders may be given emergency care in the facilities provided for handling physical casualties. The care provided would be psychiatric first aid only, consisting of sedation and such temporary rest and segregation as facilities would permit. The great majority could be discharged in a short time.

Civilian wartime disasters might produce a small increase in the number of persons needing care in psychiatric hospitals. The administrators of mental hospitals should make plans with civil defense health service authorities for the orderly processing of the psychotic cases that might develop subsequent to attack.

Medical Forum

Discussion of articles published in MODERN MEDICINE *is always welcome. Address all communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Pituitrin Therapy of Pulmonary Hemorrhage*

TO THE EDITORS: I was interested to read the article by Drs. Harold G. Trimble and James R. Wood on pituitrin therapy of pulmonary hemorrhage. We have also used this method, and particularly prostigmine, to see its effect upon major pulmonary bleeding. On occasions we have felt that it might be of some help, but we are not convinced that it has any marked specific action.

Pulmonary hemorrhage so often comes under control of its own accord that we have a feeling that sedation and reassurance are of major importance. In specific instances very special treatments may be necessary.

We have had the experience of observing a blood clot in the bronchial tree contribute toward keeping the offending vessel open, and removal of that blood clot, by bronchoscopy, has allowed us to get the hemorrhage under control. Major bleeding could not be controlled and emergency pulmonary resection had to be resorted to on 2 occasions in our experience. A bronchoscope is put down to allow constant aspiration of one side and anesthesia delivery to the other while the lobectomy is being carried out. Once the offending lobe is grasped, the bleeding can be controlled by direct pressure; then the usual endotracheal anesthesia is administered.

We, as others, try various coagulants and vitamin K in hemorrhage and think they are worth a try but are not very impressive. We feel that a position of comfort is usually the optimum position for the patient. Reassurance and sedation are vital. We do not hesitate to use morphine in pulmonary hemorrhage, as patients will cough, on request, and, with proper observation, the fear of losing the cough reflex need not be a major factor.

Chemotherapy should be given along with bed rest to prevent any major difficulty from posthemorrhage pneumonia. We see no harm in using pituitrin or prostigmine intravenously in cases of pulmonary hemorrhage and, on a few occasions, have felt such therapy was of value. If one has many patients with pulmonary hemorrhages, a goodly number do not respond to this method of treatment.

OSLER A. ABBOTT, M.D.
Emory University, Ga.

*MODERN MEDICINE, Jan. 15, 1951, p. 81.

► TO THE EDITORS: Pulmonary hemorrhage always presents difficulties in the matter of treatment.

It is, of course, important to ascertain the type of vessel involved. If a systemic artery is bleeding, the blood pressure in such arteries would be higher than the pressure to which other types of vessels may be exposed. Such a vessel would be difficult to control with drugs alone.

Another important consideration is the presence of atherosclerosis. It has been shown in bleeding from the stomach that the mortality with hemorrhage rises sharply after the age of 45. This is due to the fact that the vessel is not able to retract, an important mechanism in the physiologic control of bleeding.

The presence of periarteritis or arteritis with thrombosis is another factor which certainly must have great bearing on the problem of bleeding. In an inflammatory lesion, vessels are often thrombosed so that bleeding, if it occurs, is minimal.

I have not had any experience with pituitrin in the control of hemorrhage of the lung. It is difficult, however, to ascertain the efficacy of a drug when so many factors may be involved. Would the bleeding have ceased if mere watchful waiting alone were used in the treatment of these patients? Occasionally, if bleeding is not controlled by conservative measures, surgery must be resorted to. If, for example, one knows previously that the lingula is involved by a chronic inflammatory lesion, subsequent hemorrhage is easily treated by lingulectomy.

I believe that each case of pulmonary bleeding should be individualized as much as possible. The previous history and examination of the patient, the possible location of any lesion, the amount of bleeding, all should be taken into consideration. In some cases, medical therapy may suffice; in others, surgery may offer the best hope; while in others, little may be done.

JAMES N. CIANOS, M.D.
Baltimore

► TO THE EDITORS: The underlying pulmonary disease is an important factor in selecting the most effective method for the control of severe pulmonary hemorrhage.

From experience, I feel that people with large pulmonary cavities require immediate heroic measures such as morphine and its derivatives and, frequently, repetition of these drugs. When the pulmonary disease is not too extensive and the patient has not had any massive hemorrhages in the past, I prefer to use the milder antitussive medications, such as codeine by injection or hycodan bitartrate by mouth. Of course, strict bed rest with assurance to the patient that his condition is not serious averts anxiety, which is a great factor in preventing cessation of bleeding.

The therapy suggested by Drs. Trimble and Wood sounds very plausible. However, we can never tell when a pulmonary hemorrhage will be fatal and so this therapy, which is not used for massive hemorrhage, cannot readily be relied upon unless the history of the patient assures us that his hemorrhage is not too severe.

CECIL RUDNER, M.D.
Reistertown, Md.

ALHYDROX ADSORBED DIP-PERT-TET®

BUILDS MAXIMUM... DURABLE IMMUNITY

Alhydrox Increases Dip-Pert-Tet Antigenicity—In actual usage as well as reported clinical studies it has been shown that Dip-Pert-Tet Alhydrox produces uniformly superior levels of serum antitoxins. [1, 2, 3]

Alhydrox Reduces Dip-Pert-Tet Reaction Frequency—Prove it to yourself, Doctor . . . vaccinate 25 patients with a plain or alum precipitated combination and another 25 patients with Cutter Dip-Pert-Tet Alhydrox. You will see for yourself that there is a minimum of local reactions with Alhydrox adsorbed Dip-Pert-Tet.

Depend On Dip-Pert-Tet Alhydrox—for simultaneous immunization against Diphtheria, Pertussis, Tetanus. High pertussis count – each cc. contains 30,000 million Phase 1, H. pertussis organisms.

Insist on CUTTER
DIP-PERT-TET ALHYDROX
A FIRST NAME IN COMBINED TOXOIDS

*Cutter Trade Name. †Dip-Pert-Tet Alhydrox—Purified Diphtheria and Tetanus Toxoids and Pertussis Vaccine combined, Aluminum Hydroxide adsorbed.

1. Miller, J. J., Jr., and Ryan, Mary Louise, The Duration of Serologic Immunity, Pediatrics 1:8, Jan., 1948.

2. Lapin, Joseph L., Combined Immunizations, Advances in Pediatrics, Vol. IV, Interscience Publishers, Inc., New York, 1949.

3. Costello, Cyril, Improved Methods in Combatting Tetanus, J. Missouri M. A., 46:582, Aug., 1949.

CUTTER LABORATORIES • BERKELEY, CALIFORNIA

Producers of famous purified Dip-Pert-Tet Plain, a product of choice for immunizing older children and adults.

Abdominal Epilepsy*

TO THE EDITORS: Dr. Matthew T. Moore's paper on abdominal epilepsy without convulsions is most interesting and thought-provoking. Since epilepsy may manifest itself in the most variegated clinical picture, it is incumbent upon the physician to entertain such a diagnosis in all recurrent and brief episodes which somehow fail to fall into the usual categories of disease states. From a physiologic point of view, epilepsy may be defined as a symptomatic paroxysmal cerebral dysrhythmia.

Paroxysmal abdominal pain may represent the aura in idiopathic epilepsy or, on the other hand, may be an epileptic equivalent. The visceral group comprises symptoms of circulatory, respiratory, vasomotor, vesical, rectal, and pupillary nature. It is apparent, therefore, that disturbances in function occur in organs innervated by the vagus nerve and presumably start in vagal nuclei on the floor of the fourth ventricle and adjacent to the vasomotor centers.

The periodicity of these attacks despite the absence of convulsions should arouse suspicion. There is no doubt that minor attacks of recurrent abdominal pain, especially when associated with meager physical and laboratory findings, often pass unnoticed for years. It is important to remember that following a so-called abdominal epilepsy, there may be a period of confusion or a dreamy state. Occasionally, after a few hours' sleep, the patient may have only a vague recollection of the attack.

*MODERN MEDICINE, Dec. 1, 1950, p. 80.

Apropos the paroxysmal abdominal pain, may be mentioned the severe chest pain which simulates acute coronary occlusion. I reported such a case (*Am. J. M. Sc.* 216:78-83, 1948) in which, after an episode of precordial pain, the patient was confused and bewildered and made attempts to get out of bed and muttered incoherent words. It was later discovered that she had frequent petit mal attacks and psychic equivalents.

There is no doubt that a large number of these cases can be accurately diagnosed by a painstaking history of recurrent symptoms and evidences of the hysteroid state that so frequently follows minor epilepsy. Evidence should be sought for disturbances in cortical rhythm as shown by the electroencephalogram.

J. W. FISCHER, M.D.

Chicago

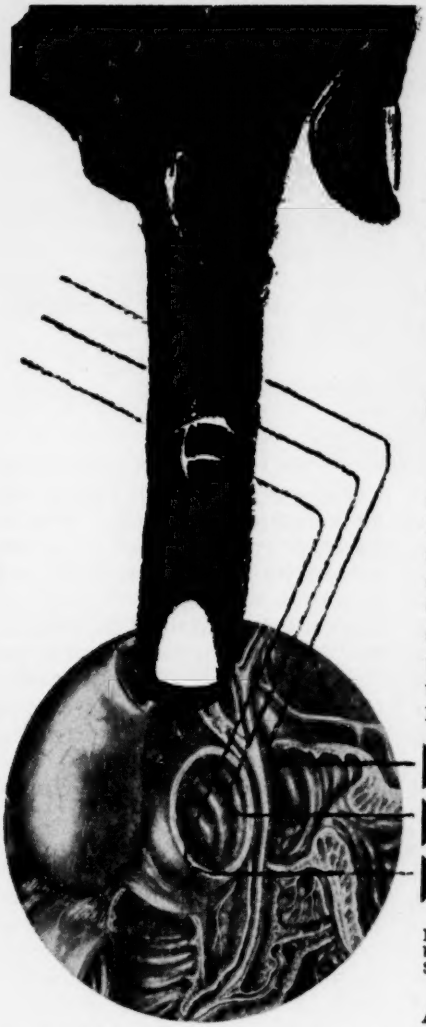
► TO THE EDITORS: In thirty years of experience I have never seen a child with abdominal pain caused by epilepsy. As you know, abdominal pain is a frequent complaint in children.

Whenever I find a child with abdominal pain of unexplained cause, I submit the child to an electroencephalogram in my office. So far, I have never found a positive tracing.

Some of the reports in the literature included tracings which I would not interpret as indicating epilepsy. In all of the epileptics I have seen, I have never found one with the complaint of abdominal pain of peculiar or unexplained origin.

M. G. PETERMAN, M.D.

Milwaukee



the finger
of suspicion
points to

biliary disorders

...when the patient complains of flatulence, indigestion, constipation. Every other patient past age 40 suffers from some form of biliary disturbance,* investigators state. Caroid and Bile Salts Tablets offer simple, effective relief of dyspepsia, constipation and other distressing symptoms of biliary disorders. Functional restoration is aided by—

- stimulation of bile flow
- improved digestion and absorption of foods
- gentle laxation without whipping the bowel

Dosage: 1 or 2 tablets after breakfast and at bedtime with a glass of water.
Sample available on request

American Ferment Company, Inc.
1450 Broadway, New York 18, N. Y.

*Rehfuss, M. E.: Penna. Med. J. 42:1335, 1939.

CAROID AND BILE SALTS *tablets*

Specifically indicated in biliary dyspepsia and constipation

► TO THE EDITORS: Since Dr. Moore's first paper in 1944 on the subject of abdominal epilepsy, he has repeatedly emphasized the importance of epilepsy as a cause of paroxysmal abdominal pain without convulsions. He has also discouraged the diagnosis of abdominal migraine as a cause of isolated abdominal pain not associated with cephalalgic migraine. Dr. George Engel of the University of Rochester concurs with Dr. Moore's opinion that epilepsy can be a cause of paroxysmal abdominal pain without convulsions and that abdominal migraine due to vascular change in abdomen per se does not occur.

Dr. Moore describes the trigger mechanism of the abdominal pain associated with nonconvulsant epilepsy as a disturbance of the cerebral cortex in areas 6, 5, and 3 of Brodman or irritation of the diencephalon, or both. These areas, when disturbed, produce abnormal gastrointestinal motility with resulting abdominal pain.

That epilepsy may manifest itself as paroxysmal abdominal pain without convulsions tends to be confirmed by the findings of Segal and Blair in a group of 104 patients who had various gastrointestinal symptoms without demonstrable gastrointestinal disease. Paroxysmal abdominal pain was present in 12 of this group: 8 (67%) of these showed cerebral dysrhythmia, with relief of symptoms in 4 of the 5 individuals treated with anticonvulsant drugs. Since 69% of the 104 patients had abnormal electroencephalograms, research is now in progress to learn whether the incidence of cerebral dysrhythmia is higher in individuals manifesting gastrointestinal symptoms without local organic disease than in normal persons of comparable ages.

In summary, it can be stated that abdominal epilepsy should be considered in patients with paroxysmal abdominal pain in whom no other cause of the pain is evident. These patients should receive an adequate trial of anticonvulsant therapy.

HARRY L. SEGAL, M.D.
Rochester, N.Y.

► TO THE EDITORS: Not only experimental but also clinical support for the existence of abdominal forms of cerebrogenic paroxysmal reactions (gastrointestinal, genital, renal, and so on) is seen in the writings of Beattie, Fulton, Watts, Frazier, Uhle, and others. Of special interest is the relation of the work of Dr. Moore on the abdominal pain syndrome and its applicability as a diagnostic localizing entity of value in focal traumatic, luetic, and neoplastic cerebral lesions.

Reports such as Dr. Moore's merit the attention of neurologists especially interested in the migraine-epilepsy problem, although one must not be confused with the other, even on a metabolic or constitutional etiologic basis. Evidence such as offered by Dr. Moore should direct our attention to the cerebral cortical influence (manifesting itself in pain and other paroxysmal symptom complex phenomena) upon the functions and structures of viscera and organs much more than heretofore.

SAMUEL M. WEINGROW, M.D.
Bronx

Doctor... listen to this conversation about you!

PATIENT... *There was so little discomfort in having that mole removed.*

NURSE... *The Doctor's new technic with the HYFRECATOR is wonderful!*

PATIENT... *You can tell the Doctor I'm going to have my sister come in. She worries about a mole on her abdomen.*

NURSE... *It's a good idea to have him look at it to make sure... and he'll know if it should be eradicated with the HYFRECATOR.*

Over 70,000

HYFRECATORS

in daily use

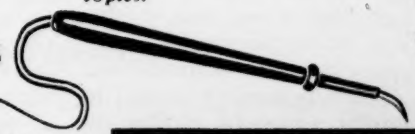
to eradicate moles, warts, unwanted hair and other superficial growths. Many doctors use the HYFRECATOR...High Frequency Eradicator...for fulguration and bi-active coagulation as well as desiccation. They find that the HYFRECATOR'S double spark gap power, accurately controlled and smoothly graded current... exactly meets their individual office electrosurgical demands.

The BIRTCHER Corporation

Los Angeles 32, California

And Doctor... Please Note

The increasingly widespread public knowledge of the danger of moles as fore-runners of skin cancer have made your patients more receptive to your suggestion that all suspect lesions be eradicated. New reprints on Precancerous Lesions are available. Write your name and address – mail for your copies.



ERADICATE THAT SUSPECT PRECANCEROUS LESION

To: The BIRTCHER Corp., Dept. MM-3-51
5087 Huntington Dr., Los Angeles 32, Calif.

Please send me free reprints on Precancerous Lesions and Literature on the Hyfrecators.

Name.....

Street.....

City.....State.....

► TO THE EDITORS: Dr. Moore's experience is entirely in accord with our own, except that we have identified what we believe is a particular pattern characteristic of thalamic and hypothalamic epilepsy. I have prepared a report on 300 cases showing 14 and 6 per second positive spikes during sleep; 7% of patients with this type of discharge have attacks of pain.

F. A. GIBBS, M.D.

Chicago

► TO THE EDITORS: The external manifestation of an abnormal epileptic discharge will obviously depend upon which circuits within the brain are involved. Under certain circumstances, the discharge may remain confined within one group of circuits, resulting in pure somatic sensory, pure somatic motor seizures, and so forth.

It has also been demonstrated that seizure discharges may selectively involve autonomic circuits alone, although such observations are relatively rare. Such seizures may involve sensory or motor components of the autonomic system or combinations of both. These may manifest themselves by epigastric sensations, sudden cutaneous vasodilation, changes in the blood pressure, lacrimation, salivation, diaphoresis, piloerection, changes in pupillary size, or micturition, often associated with loss of consciousness. It is assumed that such epileptic discharges arise in the diencephalon and spread locally. If other portions of the central nervous system are involved, commonly recognized features of seizures appear.

The epigastric aura is a frequent warning of an oncoming seizure and usually consists of a vague sensation arising in the epigastrium, or occasionally as low as the umbilicus, which then ascends to the neck or head, at which time consciousness is usually lost. This sensation may or may not be associated with autonomic phenomena such as hyperpnea, flushing, and the like. Such epigastric auras may precede autonomic seizures as well as those varieties which arise in the vicinity of the sylvian fissure.

It is possible that certain cases described as abdominal epilepsy may be variants of the pattern described above, in which case the symptoms represent true seizure phenomena. Such epigastric sensations do not ordinarily include true abdominal pain.

Abdominal pain of this type has not been reproduced by electrical stimulation of the cerebral cortex in the conscious human and, on physiologic grounds, it is questionable whether it has a cortical representation. Since the mechanism of visceral pain particularly in this locus is exceedingly complex, the establishment of an epileptic etiology is correspondingly difficult. Psychosomatic factors must always be considered, not only in the consideration of possible etiologic factors but also in the evaluation of any therapeutic results. These and other alternatives must especially be considered when paroxysmal abdominal pain appears without any seizure phenomena, clinical or otherwise.

ARTHUR A. WARD, JR., M.D.

Seattle

...smoothly yet forcefully

CONSTIPATION CONTROL ... at a physiologic pace!

At no time over-violent...at no time lagging either—but, at an *effective physiologic* pace, proceeds the intestinal bulk formed by Konsyl or L. A. Formula. These two gelatinous-residue builders bind just enough moisture to lubricate and plasticize the stools, not enough to cause violent flushing. Normal peristalsis is thus resumed, and defecation reflex re-initiated—without griping, cramping or tenesmus.

Alike in providing physiologically correct constipation control, Konsyl and L. A. Formula *differ* in the patient groups they best serve:

KONSYL ***(100% plantago ovata coating—the first and original psyllium preparation).*** Konsyl supplies effective bulk and lubrication, without added carbohydrates. Indicated in diabetes, obesity or any other low-carbohydrate diet or, wherever a pure psyllium preparation is preferred—as in postoperative care following hemorrhoidectomy. Non-irritant, non-habit-forming. Available in 6 and 12 oz. cans.

L. A. FORMULA ***(50% plantago ovata coating with lactose and dextrose for maximal dispersibility).*** Because of its high degree of palatability and refinement, indicated especially in ulcer cases, pregnancy, lactation, cardiac disorders, pediatrics, geriatrics, etc. Available in 7 and 14 oz. cans.

BURTON, PARSONS & CO. • WASHINGTON 9, D. C.
Established 1885

► TO THE EDITORS: If we accept the statement of Hughlings Jackson that "epilepsy is the name for occasional, sudden, successive, rapid and local discharges of the gray matter," then a multitude of symptoms widely diverse in their clinical manifestations may be classed as epileptic.

Occasionally, the symptoms may be centered in the abdominal area with pain or vomiting or associated visceral symptoms. As with other forms of epilepsy, the diagnosis is made by exclusion of other conditions that might produce these symptoms and by positive evidence, such as a personal or family history of other more usual forms of epilepsy, an abnormal electroencephalogram, or control of symptoms by anticonvulsive drugs.

In my experience, seizures that involve the abdominal viscera are encountered more often in children than in adults. Vomiting is more common than pain, and attacks are usually genetic in origin or, if acquired, the lesion is subcortical, such as the result of asphyxia or midbrain bleeding at birth.

"Abdominal epilepsy" does not seem a happy choice of words. A term that suggests the origin rather than the destination of abnormal discharges of the gray matter seems preferable. Thus, involuntary clonic movements of a hand, instead of being called "hand epilepsy," should be termed "rolandic (jacksonian) epilepsy." The cases so well described by Dr. Moore represent perturbations primarily of the autonomic nervous system and hence would best be called "autonomic seizures" (or epilepsy) with abdominal pain or vomiting, or whatever the symptoms are.

Migraine is another expression of autonomic upset, the predominant symptoms being pain in the head, visceral symptoms of nausea and vomiting, and sometimes symptoms of cerebral involvement such as scotoma, hemianopsia, and hemiparesthesia. The cephalalgic symptoms arise from disturbance of the portion of the autonomic system that controls the caliber of cranial arteries. If abdominal pain is epilepsy, then migraine might be named cephalalgic or abdominal epilepsy, or both.

A local discharge of the gray matter usually does not remain local, but involves other portions of the central nervous system, giving a wide array of symptomatology. Thus, an attack may contain features of both migraine and epilepsy, "migralepsy," or there may be alternation of abdominal pain with paroxysmal hemicrania or with paroxysmal convulsive movements. The abdominal symptoms under consideration may seem more related to migraine in some patients and to epilepsy in others.

Unfortunately, the electroencephalographic abnormalities usually consist of simple slowing and are not specific for epilepsy. Also, drugs that control convulsive symptoms may not influence those that involve the viscera. However, exact pigeonholing of symptom complexes under some purely descriptive label, such as epilepsy or migraine, is not important, but rather the recognition that the many manifestations of paroxysmal and unprovoked upset of the auto-

THERE ARE ENEMIES IN YOUR OFFICE, DOCTOR...

They're old friends of yours but unfriendly to your patients. Laymen associate them with pain. They are the doctor's-office odors of antiseptics and medication that needn't disturb your patients if you use Airkem.

At the same time Airkem will insure against smells that can become really offensive—the human odors to which most waiting rooms and treatment rooms are subject.

Many doctors know Airkem as the efficient odor counteractant with air freshening effect. It is made with 125 compounds as found in nature, including Chlorophyll.

It's so simple, it costs only pennies to make your patients comfortable and your work easier with Airkem. In portable fan units for constant odor-insurance. In handy Mist bombs for emergency smells.

Order today from your Airkem supplier or write to Airkem, Inc., 241 East 44th Street, New York 17.

airkem protects your patients from ODORS

nomic nervous system are members of the same family and that the paroxysmal recurrence of abdominal symptoms may represent seizure phenomena which, like the more easily recognized manifestations of epilepsy or migraine, should receive appropriate medical, social, and psychologic therapy.

WILLIAM G. LENNOX, M.D.
Boston

► TO THE EDITORS: Dr. Moore has called attention to an interesting aspect of medical diagnosis, the relationship between epileptic discharges in the brain and abdominal manifestations.

The frequency of abdominal symptoms in epileptic individuals is, of course, well known. As a rule these represent minor aspects of the total picture and are easily overlooked. Frequently, it is difficult to distinguish abdominal manifestations of an epileptic seizure from more common symptoms which have their origin in the intestinal tract—hypotonicity and constipation, irritability with frequent loose bowel movements, distention by gas, and so forth. Dr. Moore has offered suggestions which should help in making these distinctions.

From the data available it is difficult to judge how common the syndrome of true localized abdominal epilepsy is and how desirable it would be to treat all patients with acute recurrent abdominal symptoms for which no adequate explanation is found by means of antiepileptic medication. The total of 67 cases reported must, of course, be considered against a background of many more cases of epilepsy with additional manifestations and of a far larger number of cases with similar abdominal symptoms unrelated to epilepsy.

My own experience with children, nonepileptic and epileptic, would lead me to believe that the syndrome of localized abdominal epilepsy is rare but does exist. The problem is somewhat more confusing in children than in adults because, until the age of 7 to 8 years, children locate their symptoms poorly. Not infrequently, young children will insist that the center of the abdomen is the site of symptoms which actually arise in the groin, chest, or as far away as a fractured clavicle.

Dr. Moore is to be commended for drawing attention to this syndrome and for pointing out so clearly the diagnostic problems it poses.

EDWARD M. BRIDGE, M.D.
Buffalo

► TO THE EDITORS: It is not unusual for a general surgeon to see many cases of paroxysmal abdominal pain. Fortunately, most of these can be diagnosed with ease, the exact cause of the pain being ascertainable when diligence, patience, and diagnostic acumen are combined. But the cases of obscure paroxysmal abdominal pain for which, after thorough investigation, no etiologic factor can be determined tax the ingenuity not only of the internist but the surgeon as well.

My own experience with abdominal epilepsy dates to a time several years ago when I was called to see

Often it takes just this help when a patient should give up coffee!

You know from experience that patients break the coffee habit more easily—have less tendency to "backslide" when you recommend *caffein-free* Postum instead.

Now, you can help your patients who should give up coffee, in an even more tangible way... by actually giving them a generous trial supply of Postum, with your compliments. Simply use the coupon below—and we will gladly send you, without charge or obligation, our special Professional pack of 12 trial-size packages of Instant Postum. The handy order blank below is for your convenience.

* * *

While many people can drink coffee or tea without ill-effect—for others, even one to two cups may result in indigestion, hypertension and sleepless nights. *See "Caffein and Peptic Ulcer" by Drs. J. A. Roth, A. C. Ivy, and A. J. Atkinson —A. M. A. Journal, Nov. 25, 1944.*

Use this order blank to obtain—
FREE—Postum for your patients!

Instant
POSTUM
A PRODUCT OF GENERAL FOODS

Postum, Dept. MM-3, Battle Creek, Michigan
Please send me, at no cost or obligation, your Professional Pack of 12 trial-size packages of Postum.

Name ..... M. D.

Street .....

City ..... *State* .....

Offer expires May 15, 1951. Good only in Continental U. S. A.

a young woman suffering from what was obviously an acute intestinal obstruction. She had already had several operative interventions for various and sundry attacks of paroxysmal abdominal pain without convulsions. Unfortunately, having had no experience with the condition under discussion, I operated on the patient with the diagnosis of acute intestinal obstruction. She was not relieved. Postoperatively her symptoms recurred repeatedly and each time she presented a classical textbook picture of acute intestinal obstruction.

It was at this time that Dr. Moore's article appeared in the *Journal of the American Medical Association*, giving a first inkling as to the possible etiologic factor in this case. The patient responded remarkably to specific anticonvulsant therapy, and on several occasions a therapeutic test performed by withdrawing the drug proved the diagnosis conclusively. At no time during the period of one year that the patient was under my personal observation did she have a convulsion.

Subsequent to this experience, a 45-year-old man was seen with almost identical signs and symptoms. The condition likewise had been diagnosed as an intraabdominal lesion requiring surgery. After thorough and complete investigation that included neurologic and psychologic examinations, the diagnosis of abdominal epilepsy was made. Confirmation of the diagnosis was made with the therapeutic test.

These 2 cases within a period of three months have fixed the entity of abdominal epilepsy so in mind that unless a case of paroxysmal abdominal pain can be proved to be something else, my diagnosis is abdominal epilepsy until proved otherwise. Such an attitude may be overcautious, but it prevents many needless operations. Too, these 2 cases have made me wonder exactly how many cases in which operations are done and absolutely no pathology is found are examples of this disease entity. Detailed study of the 2 cases in my own experience definitely shows that most, if not all, of these patients present the syndrome of abdominal epilepsy without convulsions, although I observed convulsions in the first case during the postoperative period with the recurrence of the pain. I must emphasize that the convulsions occurred after the pain and not before it.

MARK M. SCHAPIRO, M.D.
Tegucigalpa, D.C., Honduras

► TO THE EDITORS: In a series of publications, Dr. Matthew Moore has presented convincing data pointing out that paroxysmal abdominal pain and other gastrointestinal disturbances may be of cerebral origin and represent a unique form of epilepsy. He further emphasizes the fact that "abdominal epilepsy" may occur without the overt manifestations of the convulsive state.

The writer of these comments has had several patients with brain tumor in whom severe paroxysmal abdominal pain either occurred at the onset of a major seizure or was an important feature in the pattern of a jacksonian sensory fit.

The following 2 examples illus-

FOR THE
CONSTIPATED PATIENT...

Laxative ACTION WITHOUT REACTION

Phospho-Soda (Fleet) has long been authoritatively recognized for its dependable efficacy and desirable qualities in the treatment of intestinal stasis. In average doses it produces a soft and formed, rather than a watery, evacuation; and its gentle action is quite free from irritation, griping, early tendency toward habituation, or other adverse reactions. Samples on request.

Each Fleet Enema contains [illegible] sodium phosphate 48 Gm. and sodium phosphate 18 Gm. Both Phospho-Soda and Fleet are registered trademarks of C. B. Fleet.

C. B. FLEET COMPANY, INC., LYNCHBURG, VA.

THERE IS ONLY ONE **PHOSPHO-SODA (FLEET)**

A Laxative for *Judicious* Therapy

trate that abdominal symptoms can occur in brain lesions without other epileptoid manifestations:

The first case is that of a young lady with a high cerebellopontile angle neoplasm with paroxysmal abdominal pain as one of the earliest complaints, and on whom a futile emergency appendectomy was performed. This patient continued to have attacks of abdominal pain throughout the entire clinical course of her illness, which lasted about five years. In another patient with an ependymoma of the thalamus, severe abdominal pain due to paralytic ileus was graphically demonstrated by roentgen study of the colon following a barium enema.

These cases would support the concept proposed by Dr. Moore that abdominal disturbances may result from lesions in the brain. Though this writer's experiences in this particular field have been limited to brain tumor, Dr. Moore claims that the same syndrome may result from any lesion in the brain and even from a chemical alteration of specific cell groups in the cortex.

The term "abdominal epilepsy" as used by Dr. Moore differs from most other epileptoid states in a twofold manner:

1] There is no impairment of consciousness.

2] Major or minor epileptic seizures do not necessarily coexist in the clinical picture.

It occurs to this writer that the syndrome might more appropriately be referred to as a focal paroxysmal cerebral dysrhythmia in contrast to the usual form of epilepsy—a diffuse cerebral dysrhythmia. It is to be emphasized that a diagnosis of abdominal epilepsy should only be made after a thorough study of the patient as a whole, with a rigid adherence to the criteria recommended by Dr. Moore.

In conclusion, I believe that Dr. Moore has made a valuable contribution in calling attention to the syndrome of abdominal epilepsy. In addition to its diagnostic implications, the recognition of this syndrome may control an acutely painful abdominal disturbance which might be resistant to other forms of therapy.

ALEXANDER SILVERSTEIN, M.D.
Philadelphia

► TO THE EDITORS: My experimental experiences certainly indicate that there are foci in the frontal and parietal lobes from which intestinal spasms may be elicited.

If such spasms occur as part of a seizure affecting also the somatic sphere, the assumption that such spasms and the associated pain are of cortical origin seems fully justified. If the intestinal pain appears without a seizure in the somatic sphere, it would seem necessary that the following criteria be met in order that the assumption of a cortical origin of the pain be justified: All possible extracortical causes of intestinal spasm and pain should be excluded, the existence of an epileptogenic cortical focus should be proven by EEG studies, and the pain should disappear on instigation of antiepileptic therapy.

E. A. SPIEGEL, M.D.
Philadelphia

Diagnostix

Here are diagnostic challenges presented as they confront the consultant from the first clue to the pathologic report. Diagnosis from the Clue requires unusual acumen and luck; from Part II, perspicacity; from Part III, discernment.

Case MM-187

THE CLUE

ATTENDING M.D: The patient in this first bed is a 50-year-old man who has had pneumonitis with consolidation in the right lung for four weeks. The lesion is almost completely resolved now, and my diagnosis was atypical pneumonia. However, his wife has just been admitted to the hospital today, and roentgenograms show an identical picture. I remember the case not so long ago in which you diagnosed psittacosis in a similar situation. However, the same line of thought does not seem to apply here.

VISITING M.D: What do you mean by that?

ATTENDING M.D: Psittacosis titers are normal and there has been no exposure to birds of any sort—parrots, canaries, pigeons, or what have you.

VISITING M.D: Any exposure to meat-packing or rendering plants, wool, unpasteurized or uninspected milk, ticks, or the like?

ATTENDING M.D: Not that we can find.

VISITING M.D: Maybe this is just a case of atypical pneumonia, but again we have this one, two sequence—husband, wife, about a month apart. I suspect something strange. Is there any significant history, physical examination, or laboratory data that you have been able to ascertain?

When Lactation Fails

℞ LACTOGEN®

When the supply of breast milk is inadequate or when lactation fails entirely, there is no better formula than Lactogen. Designed to resemble mother's milk, it consists of whole cow's milk modified with milk fat and milk sugar. It differs, however, in one important respect: the protein content of Lactogen in normal dilution is one-third greater than that of mother's milk—2.0% instead of 1.5%.

A Complete Infant Formula In One Package

Lactogen contains all the ingredients of a well-balanced infant formula. In addition, it is fortified with iron to compensate for the deficiency of this mineral in milk.

Easily Prepared... Merely Add Water

Lactogen is simple to use. The prescribed amount is stirred into warm, previously boiled water. Either a single feeding can be prepared, or the entire day's quantity can be made up and stored in the refrigerator until used.

THE NESTLÉ COMPANY, INC.

COLORADO SPRINGS, COLORADO

ACCEPTED

NOTABLY HIGH IN PROTEIN CONTENT

Lactogen contains a generous amount of protein... more than enough to satisfy every protein need of the rapidly growing infant.

PART II

ATTENDING M.D: Nothing gives any clue.

VISITING M.D: You will recall we solved that psittacosis case by visiting the home. Let's do it again. *(They take the Visiting M.D.'s car and drive to the patient's house in a suburban area.)* Here is where they live. *(The maid opens the door. They introduce themselves, look through the house, examine the grounds, and are about to leave when they see a doorway to a basement apartment. The Visiting M.D. knocks on the door. A familiar person answers it.)* Well, hello, Dr. Jones! I didn't know you lived here. I want you to meet my associate from the hospital, Dr. Smith. Dr. Jones works in the virus laboratory at the State Board of Health. We'd like to talk to you, Dr. Jones, about the nature of this pneumonitis that your landlord and his wife have. It seems to be some obscure virus disease. Have you been sick or had any pneumonitis or virus illnesses?

DR. JONES: No, I've been perfectly well. I have supper with them every evening.

VISITING M.D: Have you been working with any viruses?

PART III

DR. JONES: Yes, we've been working with strains of *Rickettsia burneti*. We have used milk specimens collected from southern California dairies which are contaminated with the virus. We are injecting this into guinea pigs and using heavily infected yolk sac suspensions.

VISITING M.D: Do you change all your clothes when you work in the virus and rickettsial laboratory?

DR. JONES: We change our uniforms, but we don't wear protective head coverings or different shoes. There was an outbreak or mild epidemic of Q fever among some of my colleagues about a month before my landlord got ill, but I don't know how he could get it.

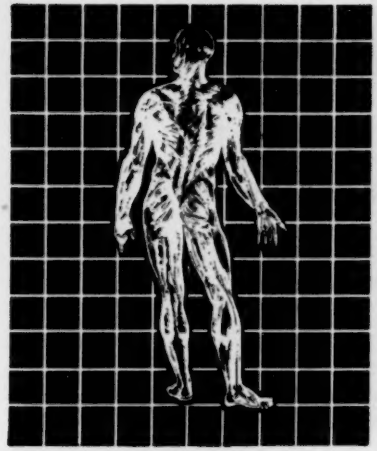
VISITING M.D: Most infections with Q fever come directly from transmission of organisms by infected dust droplets and other particulate matter, usually in packing-house and dairy and hide workers. Occasionally laundry workers handling unsterilized laboratory apparel get the disease. I think, however, it's possible to spread the virus by clothing, shoes, hands, or hair. Certainly this rickettsial organism is a very resistant one and could survive transportation from laboratory to home. The transmission period coincides with the reasonable incubation period; although you have never been sick, I suspect you brought the rickettsia home.

DR. JONES: Let's get a complement-fixation titer for *R. burneti* on the 2 patients.

PART IV

ATTENDING M.D: The titer for the husband, who is now over his illness, is 1/640 and the titer for the wife is 1/160. I think we can assume that both have Q fever.

VISITING M.D: Groundwork solves the problem again. One need not be a packing-house worker to get Q fever.



Your Patient Has 18 to 20 Square Feet of Surface Skin!

The average human body has a surface skin area of 18 to 20 square feet—and every inch is at all times susceptible to one skin disorder or another.

Fortunately, a dermatologic cream exists which is highly effective in alleviating many of these conditions.

Tarbonis

THE ORIGINAL CLEAN WHITE COAL TAR CREAM

All the Therapeutic Advantages of Crude Coal Tar with Irritating Residues Removed

Of 51 difficult dermatologic cases recently treated with TARBONIS in a 5-week to 5-month period, 54.9% cleared or showed marked improvement.* 25.5% showed good response. TARBONIS brought satisfactory results in 80.4% of the patients! *41 cases involved conditions of 2 to 10 years duration, not yielding to other therapy!*

	CASES	CLEARED OR MARKED IMPROVEMENT	MODERATE IMPROVEMENT	SLIGHT OR NO IMPROVEMENT
CHRONIC RECURRENT CONTACT DERMATITIS	11	9	1	1
PSORIASIS	11	2	4	5
NEURODERMATITIS	5	3	2	–
ATOPIC ECZEMA	8	6	1	1
SEBORRHEIC DERMATITIS	6	5	1	–
VARICOSE ECZEMA	4	1	1	2
ALLERGIC DERMATITIS	3	–	2	1
LICHEN PLANUS	3	2	1	–
TOTAL	51	28	13	10
%		54.9	25.5	19.6

For prescriptions—all pharmacies stock 2¼-oz. & 8-oz. jars; for dispensing purposes, 1-lb. & 6-lb. jars available thru your surgical supply dealer.

**Lowenfish, F.P., N.Y. State J. Med., 50:922 (Apr. 1) 1950.*

THE TARBONIS COMPANY Dept. MM
4300 Euclid Ave., Cleveland 3, Ohio
Please send literature and clinical sample of TARBONIS

NAME _____ M.D.

ADDRESS _____

CITY _____ ZONE ____ STATE _____

Book Chapter

Exercises for the Pregnant Woman

FREDERICK W. GOODRICH, JR., M.D.*
From the book, Natural Childbirth†

This article, although addressed to the patient, suggests one way of meeting a problem common to all general practitioners. Natural Childbirth *is a handbook for expectant mothers. The author has written it as he would talk to a patient in his office.—Ed.*

As you know, doctors always advise an extra amount of rest during pregnancy. This may be difficult advice to follow, especially if you find it necessary to work during part of your pregnancy. Thus the ability to relax will be of great benefit. You will be able to rest completely for short periods of time with the aid of relaxing technics. During labor, the technics will be especially valuable, because you will find that any discomfort during delivery of your baby will be greatly eased by their application.

RELAXING POSITION

The first requirement for relaxing is a comfortable position.

In early pregnancy, before the uterus has become large enough to cause much fullness of the abdomen, you will find that the most comfortable position is one in which you lie flat on your back on a bed with a firm mattress. A small pillow under your neck and one under each knee are very helpful (Fig. 1) to keep muscles of the back of your neck and calves from tiring.

Make sure that your clothing is loose and does not bind or restrict motion. The least amount of cloth-

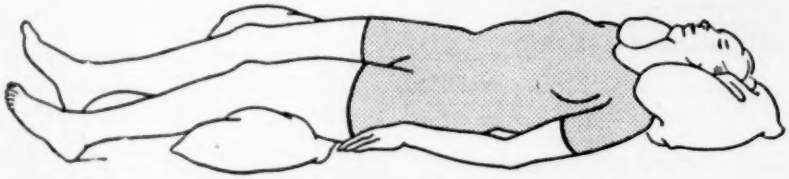


Fig. 1. Pillows under knees and neck aid relaxation.

* Grace-New Haven Community Hospital, New Haven, Conn.
† Excerpts from the book, *Natural Childbirth*, 176 pages. Published by Prentice-Hall, Inc., 70 Fifth Avenue, New York City, 1950. $2.95

It's Sterile!

Ready to Use

An Outstanding Packaging Achievement*

The Doctor's Requirements were uppermost in the mind of Lilly in planning this package—they understand the terrific demands on your time—and deliver with each package of "Duracillin A.S." a needle that is perfectly *sterile*, and instantly available for use—saving you and your nurse precious seconds.

This final refinement in packaging is another reason why the leading pharmaceutical manufacturers so frequently turn to I L for the perfect package. Not only is I L unit packaging more convenient for both the doctor and his patient—it is completely protective until the last dose is used—it is a most economical package for fine pharmaceuticals.

You will find, both in sample packages and dispensing sizes that the finest products are usually in I L packages. Watch for them.

IVERS UNIT PACKAGING LEE CO.

215 CENTRAL AVENUE NEWARK, NEW JERSEY

* Creators of a thousand and one types of Unit Packages for tablets, capsules, powders, creams and unusual products, during 31 years of Packaging Service.

ing compatible with warmth is desirable.

BREATHING

Once you have assumed the relaxing position, you are ready to take up the breathing exercise.

Place your hands on either side of your abdomen just below your ribs so that the fingertips almost meet in the midline of the abdomen (Fig. 2). Now breathe slowly in and out, so as to make your hands rise as your breath comes in and fall as you let your breath out.

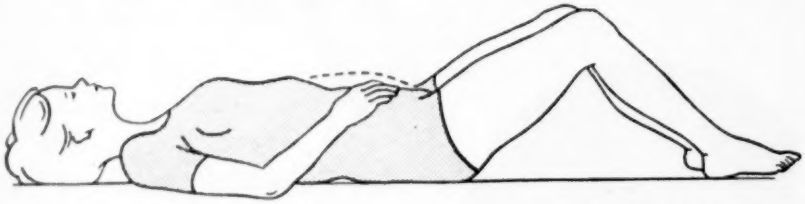


Fig. 2. Dotted line shows abdomen at end of inspiration.

You will realize that you have altered your normal breathing, in which most of the movement during inspiration and expiration is up in the chest. The motion of the abdominal wall in this breathing is the result of using the diaphragm and will be no novelty to those who have taken singing lessons. As the diaphragm contracts it moves downward, shortening the abdominal cavity and enlarging the thoracic cavity. The lungs will then inflate due to the pressure of the atmospheric air. As you relax, the diaphragm moves up again and the air is pushed out of the lungs.

This type of breathing is called abdominal or diaphragmatic breathing, and it is an important part of your preparation for childbirth. Practice it frequently and diligently with the aim of making each breath in and out last as long as possible and the movement of the abdominal wall as great as possible. You may notice that your chest is rising and falling with each breath in and out. This means that your breathing is not entirely diaphragmatic, as it should be.

As you become more adept, you will find that the presence of your hands on your abdomen is not necessary, at which time you should let your arms fall to your sides with the elbows partially bent. For the first few times this exercise of lying in a relaxed position and practicing diaphragmatic breathing will be sufficient. As you accomplish this breathing you will find that it can also be practiced in other positions such as standing up or sitting down. Make a habit of doing this several times each day, working the practice periods into your daily routine.

An excellent time to do this is before your nap at noon or when going to sleep at night. It will soon become evident that you fall asleep easily after a few abdominal breaths. If you find yourself becoming tense or upset during the day, take a few breaths in this fashion before you

One Big "NO"

to infant food allergies!

It's a big "NO" to grain allergies when you start babies on Gerber's new hypo-allergenic RICE CEREAL. Contains no yeast. No malt. Low crude fiber (0.3%) and thorough cooking assure high digestibility. Mothers simply add milk or formula and serve!

For variety, alternate with Gerber's other relatively hypo-allergenic cereal—BARLEY. Where no apparent grain allergy exists, Gerber's OATMEAL and CEREAL FOOD (wheat) make extremely satisfactory starting cereals. All have added iron, calcium, B-vitamins.

Samples! Gerber's Cereal "Quads" in miniature sample boxes for your young-mother patients plus Baby Foods Analysis Folder. Write on your letterhead to Gerber's Baby Foods, Dept. 213-1, Fremont, Mich.

Babies are our business ... our only business!

Gerber's
BABY FOODS

ACCEPTED

react to the situation; this is an excellent way of "counting to 10" when under stress.

TENSION AND RELAXATION

To appreciate how the fully relaxed state feels, one must first become aware of its opposite, which is tension. The supine position outlined above is assumed. Next, various muscle groups are contracted fully to get the feeling of tension and then are relaxed. As these muscles are relaxed, you talk relaxation to them.

For example, start with the arms and hands. First, make a tight fist, clenching it as tightly as you can. Then let your fingers go loose, saying at the same time (to yourself and not aloud) "let go, let go." As soon as the hand is fully relaxed, proceed to the muscles of the arm by first bending your wrist as far as it will go and then letting go. Next the elbow should be flexed and relaxed.

It was originally recommended that this system be tried a little bit at a time; that is, a few minutes a day are devoted to the arms for a week, and then the other muscle groups, such as those of the legs, back, or face, are tensed and relaxed the next week. This may prove necessary for you, or perhaps you will find it just as satisfactory to work on all the various muscle groups at each session.

In proceeding through the various muscle groups, you will find that each tensing movement is performed by flexing each joint to its fullest extent. When trying for facial relaxation, first screw up your face, furrow the brow, and tense the jaw.

In relaxing these latter muscle groups, you should achieve the sensation of sagging of the face, with the mouth partially open (the jaw sagging), the eyelids partially closed, and the face expressionless. Your arms and legs should be completely limp and your torso should feel relaxed as if it were sinking into the bed.

While going through these various procedures, do not neglect to use diaphragmatic breathing. After you have relaxed a particular set of muscles, think for a moment about your breathing and make sure that it is correct.

Do not try too hard, for if you do, you will be defeating your purpose. If you find that you do try too hard, return again to abdominal breathing and then stop the practice period for the time being.

If it seems as though you are getting the relaxed sensation, you may proceed through all the muscle groups at one session; otherwise it is better to take them one at a time. You will find ample opportunities to practice.

Once you have mastered the technic of recognizing and releasing tension, you may be able to use it to good advantage at other times. Once achieving complete relaxation, do not arise from the supine position immediately. Stretch and get up slowly in order to give your blood pressure a chance to adjust itself to your change in position.

STRETCHING BACK MUSCLES

If the muscles of your back seem especially tired before you lie down, you may find the following exercise

now

an entirely new approach to

intranasal infections

Drilitol*

anti-bacterial • anti-allergic • decongestive

Drilitol is the only nose drop effective against both gram-negative and gram-positive pathogens. It contains *two* potent and synergistic antibiotics:

Polymyxin (new) . . . . . **anti-gram negative**

Gramicidin . . . . . **anti-gram positive**

The antibacterial spectrum of Drilitol is extremely wide. And, because Drilitol is both bacteriostatic *and bactericidal*, infection is controlled much more rapidly than if it were only bacteriostatic.

Drilitol also contains an efficient antihistaminic, thenylpyramine, and an effective vasoconstrictor, Council-accepted 'Paredrine'* Hydrobromide.

Drilitol will help you reduce the duration, severity and complications of many common intranasal infections.

Dosage: Adults: Three or four drops (1 dropperful) in each nostril, 4 or 5 times a day, not oftener than once every 2 hours. Children: ½ the adult dosage.

Available: In ½ fl. oz. bottles with special dropper that delivers the adult dose.

Smith, Kline & French Laboratories, Philadelphia *Trademark

of help in relaxing these muscles before you institute progressive relaxation.

Lying on the bed on your back, pull your knees up over your abdomen

Fig. 3. Stretching back muscles

and clasp your hands together over your legs. Now bend your neck forward as far as possible, at the same time pulling up on your knees as far as possible (Fig. 3). Hold this position momentarily and then let go slowly.

This stretches the long column of muscles in your back and will help to "get the kinks out" before you proceed with general relaxation.

One more thought on complete relaxation is in order. Do not neglect to say to yourself, "let go, let go," because, if you do neglect this, extraneous thoughts are apt to intrude themselves on your consciousness. When this happens, your eyeballs will move even though your eyes are partially closed, and there will be extraneous movements of your larynx. If this does occur, the relaxed state will be lost, in which event it will be advisable to return to the breathing and start again.

Do not be discouraged if the number of starts are many at first. If relaxation were easily achieved, there would be no necessity for practice, and the very fact that it does come somewhat hard is a sign that you are in need of practice.

As pregnancy progresses and your abdomen begins to protrude, you will find that lying on your back is uncomfortable. This is because the enlarged uterus presses on your back and, in the recumbent position, tends to crowd your diaphragm.

LATERAL RELAXING POSITION

When this time is reached, you will find that lying on your side is necessary.

You can be comfortable in relaxing if the following position (Fig. 4) is

(Continued on page 146)

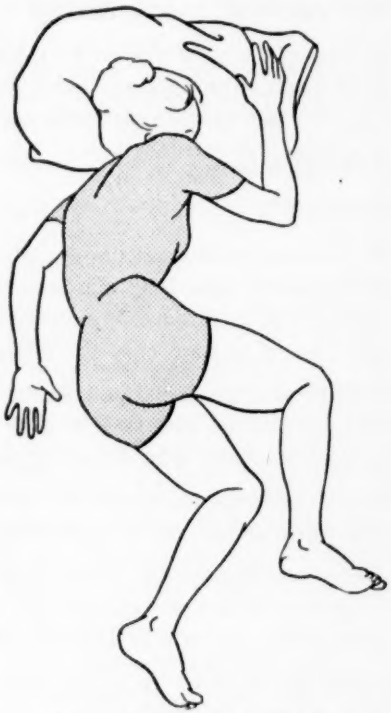


Fig. 4. Relaxing side position

New, Delicious Treat For Toddlers—

Heinz Junior Chicken Soup!

A Nourishing Dish
Your Young Patients Will Enjoy!

HEINZ makes a complete line of baby foods for your youngest patients! These quality products include—

Pre-Cooked Cereal
Pre-Cooked Oatmeal
Strained Baby Foods
Junior Baby Foods

—every one outstanding for flavor, color and texture!

TO the quality line of Heinz Baby Foods, Heinz chefs add a hearty, nourishing new soup—Heinz Junior Chicken Soup! It's a creamy broth rich with fluffy rice, golden carrots and tender morsels of chicken. And to enhance the nutritive value of Heinz Junior Chicken Soup, celery, onion and dried yeast have been added. Like all Heinz Baby Foods, this new favorite bears a name in which American mothers place great confidence.

Heinz makes a complete line of baby foods for your youngest patients! These quality products include Pre-Cooked Cereal, Pre-Cooked Oatmeal, Strained Baby Foods, Junior Baby Foods—every one outstanding for flavor, color and texture!

An 82-Year Reputation Backs the Complete Line of

Heinz Baby Foods

CEREALS • MEATS • VEGETABLES
FRUITS • DESSERTS

Mead Johnson & Company presents

An achievement

EACH TEASPOON OF MULCIN SUPPLIES:

Vitamin A	**3000 units**
Vitamin D	**1000 units**
Thiamine	**1.0 mg.**
Riboflavin	**1.2 mg.**
Niacinamide	**8.0 mg.**
Ascorbic Acid	**50 mg.**

Available in 4 oz. and 16 oz. bottles

in pharmaceutical elegance

MULCIN

6 essential vitamins
in a water-dispersible emulsion
of unexcelled flavor
and physical qualities

Refreshing orange flavor, neither too sweet nor too sour, and a texture of remarkable smoothness make Mulcin a vitamin supplement *pleasing to patients.*

It is light and non-sticky, and flows readily from bottle to spoon.

Children, adolescents and adults enjoy taking Mulcin directly from the spoon. For infants, the dose may be mixed with formula, fruit juice or water.

Ingredients of quality, skilled formulation and meticulous manufacturing controls are combined in Mulcin to make this pleasant, palatable, versatile emulsion a product of pharmaceutical elegance and a distinguished new member of Mead's vitamin family.

MEAD'S

MEAD JOHNSON & CO.
EVANSVILLE 21, IND., U. S. A.

utilized. You may lie on whichever side is comfortable but, for purposes of description, let us assume that you are going to lie on your left side. The left arm and the left leg are thus the lower or underneath arm and leg and the right arm and leg are upper. The lower arm lies with the elbow slightly bent in front of your head. The knees are both partially bent, the upper (right) knee lying over and in front of the lower knee on the bed or floor.

In this position you will find that your hips are partly rotated toward the right, so that your abdomen is well supported by the bed and not by your own muscular tension. This is the whole point of the position. Some women seem to find that putting the lower arm behind them is somewhat uncomfortable. If this proves to be the case when you try it, it is perfectly all right to bring the lower arm to the front. However, it is suggested that you give this position as originally described a fair trial before you make any changes. The essential aim is to find a comfortable position in which you can relax. Once you have assumed this position, you will find that you can breathe with the diaphragm without difficulty.

Relaxation of the muscles of the arm, leg, trunk, face, and neck may be somewhat more difficult but not impossible and should be practiced. This is the position which you will find most comfortable in the first stage of labor, and it is important that you become accomplished in diaphragmatic breathing while in this lateral position.

Some women may immediately recognize that this is their natural position for sleeping. If this is so in your case, it will be easy for you to apply the relaxing technics in this position.

Because of the crowding of your diaphragm in the later months of pregnancy, you may on occasion become somewhat breathless. When this occurs, you will find relaxing in the side position of help. Before doing this, however, the following exercise may enable you to "get your breath." Lie on the back with the arms lying loosely at the sides. Slowly raise your arms until they lie extended over your head. This stretches the thoracic cavity so that the lungs can open up and take in more air. Lying in this position, with the arms on the bed or floor above the head, breathe naturally in and out until the breathlessness is relieved. Obviously, this is an exercise which can be utilized at any time that breathlessness occurs.

Once you have become adept at relaxing do not fail to continue practice for at least a few minutes each day. It is one thing to be able to relax when you can choose your time and place and all the circumstances are propitious; it is quite another to be able to do so when there is some stress.

If relaxation is to be beneficial, you should be able to do it at will. For this reason, practice is especially valuable when you become upset or meet an emotionally charged situation.

Once you have mastered relaxation and have used it in such a situation, you will find that you are becoming a relaxed person and feel much more qualified to meet any problems which arise.

"PREMARIN"
WITH
METHYLTESTOSTERONE

i.e.

wherever combined estrogen-androgen therapy is indicated

i.e. in fractures and osteoporosis in either sex to promote bone development, tissue growth, and repair.

i.e. in the female climacteric in certain selected cases.

i.e. in dysmenorrhea in an attempt to suppress ovulation on the basis that anovulatory bleeding is usually painless.

i.e. in the male climacteric to reduce follicle-stimulating hormone levels.

"Premarin" with Methyltestosterone

for combined estrogen-androgen therapy

A steroid combination which permits utilization of both the complementary and the neutralizing effects of estrogen and androgen when administered concomitantly. Thus certain properties of either sex hormone may be employed in the opposite sex with a minimum of side effects.

Availability: Each tablet provides estrogens in their naturally occurring, water-soluble, conjugated form expressed as sodium estrone sulfate, together with methyltestosterone.

No. 879—Conjugated estrogens equine ("Premarin") ..... 1.25 mg.
Methyltestosterone ..... 10.0 mg.
Bottles of 100 tablets (yellow)

No. 878—Conjugated estrogens equine ("Premarin") ..... 0.625 mg.
Methyltestosterone ..... 5.0 mg.
Bottles of 100 tablets (red)

Ayerst, McKenna & Harrison Limited
22 East 40th Street, New York 16, N. Y.

5107

One occasionally hears the statement made that having a baby ruins the figure; that the abdomen protrudes, the breasts become flabby, the hips large, and the body weight greatly increased. Usually this statement is illustrated by pointing to some woman who has had several children and who has lost her figure completely. There is no question that this may occur if the proper care is not exercised. If the diet is poor and not properly balanced and if the muscles are allowed to become and to remain flabby, there is certainly reason for believing that pregnancy will do the figure no good.

Women who have conditioned their muscles, however, will find that their figures are just as good after the baby is born as they were before pregnancy. There is no necessity for these exercises to become a chore. Many will feel that they are a chore if it is necessary to set aside a certain definite part of the day for their performance, or if special preparation is necessary. Of course, there is certainly no objection to systematizing the following exercises if that is desired; some women find that such a system is the only way their work can be organized.

However, you will find that these exercises can be done as part of your daily routine, can be practiced while you are doing your household work, or can be performed when you are lying down for a rest or sleep. If they are fitted into your routine in this manner, they will soon become a habit and will not be onerous to you.

Do not feel that your pregnancy is too far advanced, that it is too late for you to practice these or any of the other exercises. A little conditioning is much better than none at all and, while it is desirable to begin doing these exercises in early pregnancy, it is surprising how much good can be accomplished in a short period of intensive effort.

SQUATTING POSITION

Have you ever observed young children resting on their haunches? Their squatting position is the same as that position which is traditionally assumed by the natives of other lands as they gather in the market place or in the village square.

When you first try it you will find it difficult to keep your feet flat on the floor or very close together, and you may notice a strain on the muscles of your calves and thighs. Practice this position (Fig. 5) daily for a few minutes at a time.

Fig. 5. Squatting avoids back strain.

There are many occasions during the day when you will have to bend down to pick up something off the floor, get an object from a bottom

(Continued on page 152)

AND softness

In KONDREMUL, each micro-globule is coated with a tough film of chondrus which resists gastrointestinal enzymic action—yet KONDREMUL pours freely from the bottle, is of velvety softness.

KONDREMUL, being finely subdivided, contributes soft bulk to the dry fecal residue, easing elimination and encouraging regular bowel habits.

KONDREMUL Plain (containing 55% mineral oil).
KONDREMUL with non-bitter Extract of Cascara (4.42 Gm. per 100 cc.)
KONDREMUL with Phenolphthalein—.13 Gm. (2.2 grs.) per tablespoonful.

Kondremul

AN EMULSION OF MINERAL OIL AND IRISH MOSS

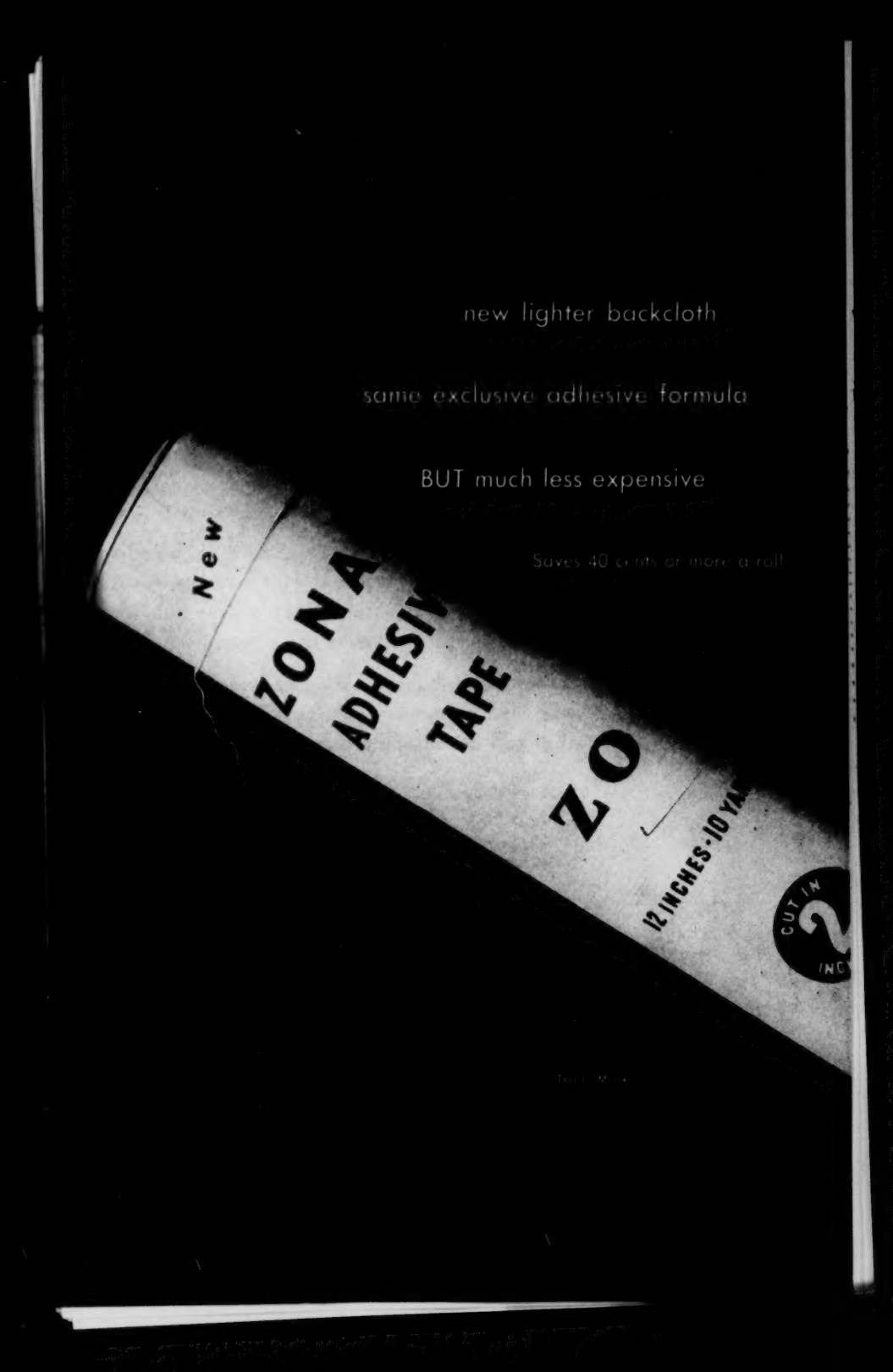
Also in tablet form

KONDRETABS

—the original Irish Moss—Methyl Cellulose Bulk Laxative in Tablet Form.

KONDRETABS induce soft, easily eliminated bulk—no bloating, griping, impaction. Convenient, pleasant, easy to take.

THE E. L. PATCH COMPANY
STONEHAM, MASSACHUSETTS


new lighter backcloth
same exclusive adhesive formula
BUT much less expensive
Saves 40 cents or more a roll
New
ZONA
ADHESIV
TAPE
ZO
12 INCHES · 10 YA
CUT IN
2
INC

ons

ffers

ew

dhesive

avings

shelf, or tie your shoes. Rather than bending from the waist, which is inefficient and a strain on your back, fall into the habit of squatting. As time goes on you will find that the sense of strain will disappear and that you will be able to keep your feet flat on the floor and close together. Later you will be able to assume this position for minutes at a time without strain.

As you do this, you are exercising the muscles of the thighs and to some extent the muscles of the perineal floor. This will make them more elastic. When you are actually having your baby, you will be in this same squatting position, with possibly some slight modifications, except that you will be horizontal on the delivery table rather than vertical. If the mother is used to this position and if the muscles in the perineal area are elastic when she is in this position, the results will be much more satisfactory.

Fig. 6. Tailor-sit helps thighs.

TAILOR-SIT POSITION

Another position which should be assumed frequently is the "tailor" position (Fig. 6).

You will recognize this as the traditional position assumed by tailors, in which the legs are crossed, the heels are tucked under the thighs, and the knees are spread outward. The ultimate aim in this position is to get the knees as far toward the floor as possible, and as you practice it more and more you will find that this will become easier to do.

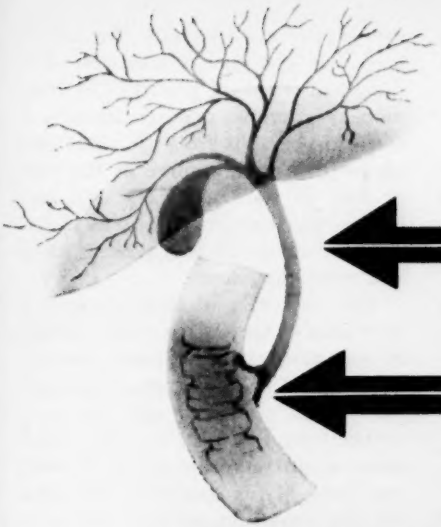
This can be done at various moments during the day when you are sitting down to read, sew, or simply to rest. It, too, will call into play the thigh muscles mentioned in the first position.

PERINEAL EXERCISE

An exercise which is primarily concerned with the perineal muscles involves their alternate contraction and relaxation. These are muscles of which you will ordinarily not be aware, and achieving a sense of awareness of them is the first step in the proper performance of the exercise. They are most easily described as those muscles which you call into play when you attempt to keep from evacuating your bladder or rectum.

Imagine that you are suddenly conscious of an overwhelming desire to urinate, but that you are unable to do so because there is no bathroom handy. Place your hand over your vulva and contract those muscles which you would call on to prevent you from emptying your bladder.

If this is done properly, you will get a sensation of contraction which will make you aware of this movement. It is a "sucking in" sensation



free flow
and
outflow
of bile

CHOLATROPIN

HYDROCHOLERETIC ANTISPASMODIC, LAKESIDE

In hepatobiliary disorders CHOLATROPIN produces unimpeded irrigation of the entire biliary tract by its dual action. Volume and fluidity of bile are increased by dehydrocholic acid. Homatropine relaxes the sphincter of Oddi and bile ducts to facilitate biliary drainage and prevent rise in intrabiliary pressure.

In chronic cholecystitis, cholangitis, non-obstructive cholelithiasis, postoperative biliary dyskinesia and biliary stasis CHOLATROPIN provides rational and effective hydrocholeretic-antispasmodic therapy. In recommended dosage, despite its powerful spasmolytic action, CHOLATROPIN does not cause drying of the mouth or visual disturbances.

CHOLATROPIN: Each sugar-coated tablet contains dehydrocholic acid 250 mg., and homatropine methylbromide 2.5 mg. In bottles of 100 and 500. Average dose: One tablet two or three times daily.

Lakeside Laboratories, INC., MILWAUKEE 1, WISCONSIN

and should be felt from the rectum in the rear through to the vagina in front.

RETRACTION EXERCISE

Another way to practice this is to contract these muscles during the act of urination. If it is properly performed you should be able to stop the stream of urine at any time before your bladder is completely empty. This can be done many times. Once you have developed this ability the exercise can be practiced in other situations.

Lie on your back with the legs extended and the ankles crossed. Slowly tighten your buttocks. With the buttocks tight, slowly press the insides of the thighs together. Then with the buttocks tight and the thighs pressed together, draw in on the perineum. Now slowly relax in the reverse order; first let the perineum go, then the thighs, and last the buttocks. Do this slowly and release slowly.

Once learned, this can be done in the standing position, but it is probably most easily learned while lying down. This retraction exercise in all its variations should be practiced daily.

The upper opening or inlet of the bowl-like pelvis ordinarily looks upward and forward when you are in the erect position. A line drawn across this opening would not be horizontal to the ground but would make an angle of about 60° with the horizontal. This means that when the uterus enlarges enough to rise out of the pelvis, as it does at the end of the third month of pregnancy, the uterus will fall against the abdominal wall for support when you are in the erect position. As the uterus enlarges still further it may thus give you a sensation of a disturbed center of gravity. The common reaction to this sensation is a throwing back of your shoulders and an increase in the curve at the lower end of your spinal column just above the sacrum. This increased curve is especially exaggerated when you wear high heels.

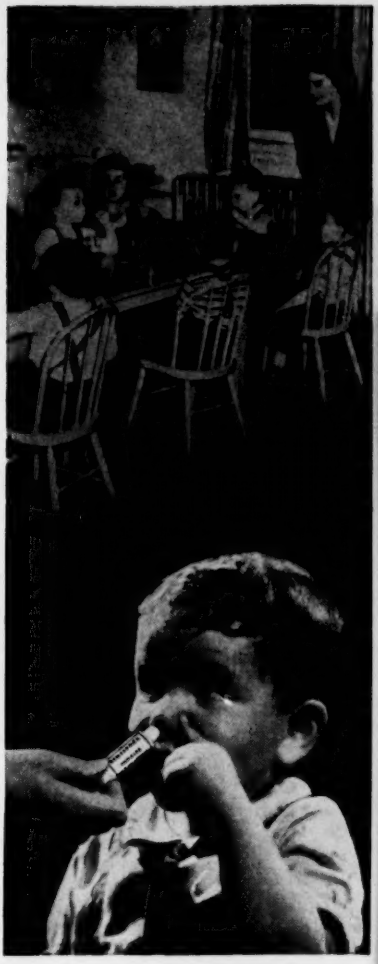
The net effect of these changes is to throw your uterus still further against your abdominal wall, stretching some of the ligaments which guy the uterus internally and throwing a strain on the back muscles which must counteract this strain to hold you erect. Thus conditions are ideal for the establishment of a backache, which will be particularly likely to occur when you have been on your feet for long periods of time and have put a heavy burden on these muscles and ligaments.

Think of a man carrying a heavy barrel. He holds it against his abdomen and leans backward as he walks to keep from falling forward. The usual posture of a pregnant woman in the second and third trimesters is like that of the man with the barrel against his abdomen. If the muscles of your abdomen and back are strengthened, your posture can be altered so that you stand more erect, with your pelvis tilted upward. In this position there will be less strain on the muscles of the back and on the ligaments of the uterus, and backache will be prevented.

PELVIC ROCKING WHILE STANDING

The exercise which is designed to correct this is known as pelvic rock-

children like this inhaler



Children instinctively dislike some things. As every parent knows, for example, they dislike nasal drops and sprays.

Fortunately, however, children like to use Benzedrex Inhaler.

But most important, from the physician's standpoint, is the fact that Benzedrex Inhaler opens the nasal air passages safely, promptly, and without causing nervousness or wakefulness.

Benzedrex Inhaler is the ideal vasoconstrictor to recommend for use between treatments in your office. (As with any medicinal agent, an adult should always supervise its use.)

Smith, Kline & French Laboratories, Philadelphia

Benzedrex Inhaler

the best inhaler ever developed

'Benzedrex' T.M. Reg. U.S. Pat. Off.

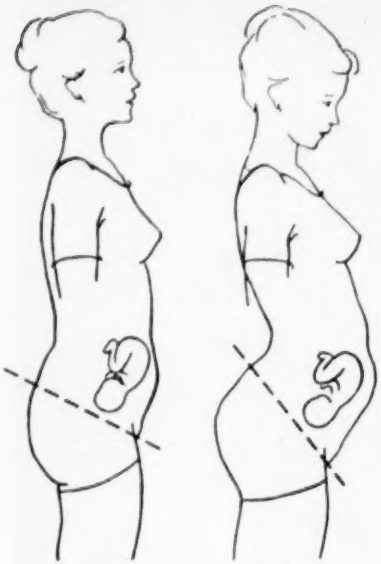


Fig. 7. Vertical rocking

ing and is comparable to what the old Army sergeants mean when they tell the recruits to throw their shoulders back, pull in their tails, and suck in their bellies.

This can be done in various positions: lying down, standing erect, and on all fours. Perhaps it is most easily described as done in the erect position.

Standing with your feet together, place your left hand low in the front of the abdomen, just above the symphysis. Put your right hand over the buttocks at the same level as the hand in front. Now keeping your shoulders and feet in the same vertical plane, push your pelvis down with your right hand and up with the left hand. If properly done your pelvis will rock up on your spinal column. Now reverse the process. The dotted line in Figure 7 indicates the inclination of the pelvic brim.

Once you have accomplished this and appreciated the movement, you can remove your hands and do it without their aid.

This rocking of the pelvis resembles that motion which is known in

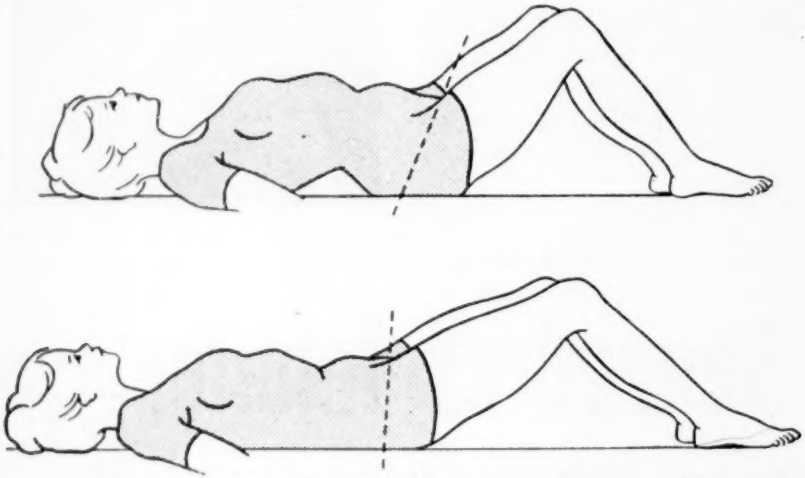
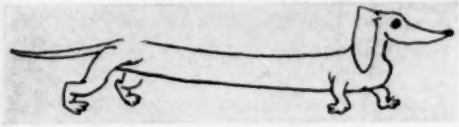


Fig. 8. Shift of pelvis brim during recumbent rocking

powerful protection



prolonged protection

pleasant protection

with **Bactine**

BRAND Reg. U.S. Pat. Off.

versatile antiseptic

powerful protection—Bactine is effective against most pathogenic bacteria, gram negative and gram positive, and against at least 14 types of common fungi. Even a dilution as high as 1:4000 of BACTINE keeps Staphylococcus aureus from growing or multiplying.

prolonged protection—Bactine keeps surfaces actively antibacterial for more than 4 hours despite re-contamination. Hands that had been washed in BACTINE gave a zero count for micro-organisms after 40 minutes in rubber gloves; hands washed in 70 per cent alcohol gave a bacteria count of 767,000 after the same period in rubber gloves.

pleasant protection—Bactine is gentle to tissues and practically painless on abrasions and cuts. It has a clean, fresh odor and does not stain.

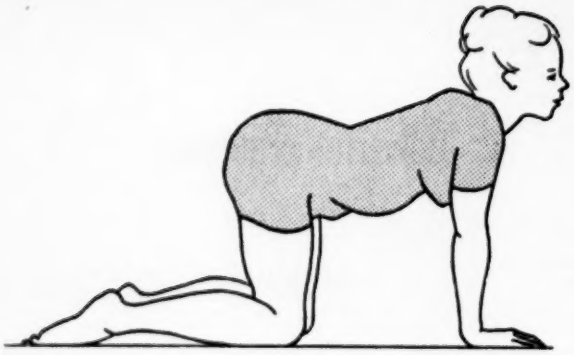
some of Bactine's many uses

- Hand disinfectant
- First aid, burns, etc.
- Disinfectant for instruments
- Sanitizing sickroom
- Backrub, massage
- Preparation of skin for surgery

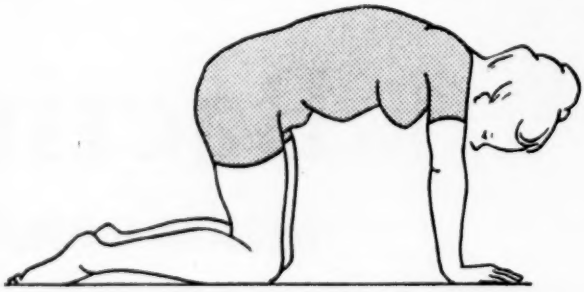
- Bactericide
- Deodorant-detergent
- Fungicide
- Antipruritic

MILES LABORATORIES, INC. ELKHART, INDIANA

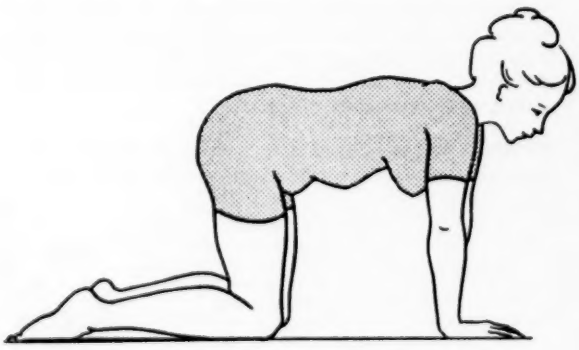
Pelvic Rocking on All Fours



First, hollow back



Second, arch back



Third, hollow back

Figure 9

night clubs and vaudeville circles as the "bump." When the same motion is done with a rotary swing of the hips it is called a "grind."

When the pelvis is rocked upward, you will be in the position of attention which was described above. Then the baby will be getting more support from the pelvis and less from the abdominal wall and the back. As you become adept and practiced, you will find a corresponding improvement in the posture and a decrease in backache.

RECUMBENT PELVIC ROCKING

Lying down, this exercise is done by alternately increasing the hollow in the small of the back and flattening the back down on the floor (Fig. 8).

It is best done (at first, at any rate) on the floor rather than the bed, since the resiliency of the mattress may make it difficult for you to do the exercise correctly.

PELVIC ROCKING ON ALL FOURS

It can also be done on all fours (Fig. 9).

Here the action is arching and hollowing the back alternately.

It is readily apparent that this exercise, especially when done erect or on all fours, can be fitted into your daily routine very easily. It can be done while you are standing at the kitchen sink washing dishes, or if you ever get on all fours to scrub or polish a floor or to dust. You will doubtless think of other ways in which this exercise can be utilized. It should be done daily.

It is probably a good plan to warn your husband before starting this exercise to keep him from assuming that you are trying out for the chorus.

BREATHING TECHNICS

In the section about relaxation, one breathing technic has already been described. There are two others which should be practiced in the later months of pregnancy. These are panting and chest breathing, both of which are of use at certain times during labor.

CHEST BREATHING

Chest breathing is most easily learned while lying on the back.

The lower border of the ribs meets in the middle of the body in the form of an inverted V. Place your hands along the lower chest on either side so that your little fingers rest on the lowermost ribs (Fig. 10). Breathe slowly in and out so as to open up the arms of the inverted V; this will cause your hands to move outward as the breath is drawn in.

Fig. 10. Deep chest breathing

Note that in this exercise your breathing seems to be all in the lower chest.

PANTING EXERCISE

In panting, quick short breaths are taken through the open mouth high in the chest.

The dotted line in Figure 11 indicates the change in the position of the sternum as the breath is drawn in and out. If you place a hand in the midline of the upper chest at the root of the neck this hand should move in and out with each complete breath.

PUSHING EXERCISE

An exercise which should be learned and practiced in later pregnancy is pushing. This should be done during bowel movements only. It is an expelling procedure.

Take two fairly deep breaths through the mouth. Hold the second inspiration with the lungs inflated, close your mouth and "bear down," that is, push toward your rectum.

This pushing action is achieved with the muscles of the abdominal wall. With the lungs full of air, the diaphragm is fixed in its descended position. Contraction of the abdominal muscles at the same time will increase the pressure within the abdomen, which in turn will result in an expulsive force on the openings in the perineum, that is, the rectum and the vagina.

This is the same type of pushing you would be doing to expel a difficult bowel movement. If you place a small footstool under your feet while sitting on the toilet you will be in the squatting position and you will find that this pushing can be done even more efficiently. It is not advisable to do this exercise, however, if you have a constipated bowel movement.

These last three exercises need be practiced only during the last month or two of pregnancy. They are not difficult to learn, and you need only become familiar enough with them to be able to do them when called upon.

Although it is desirable that you do not let the practice of these technics become an onerous chore, still they will be of little benefit if they are not practiced enough for you to acquire some proficiency in them before the birth of your child. Remember that the benefit which you will derive from them will be great and will bear a definite relation to your skill.

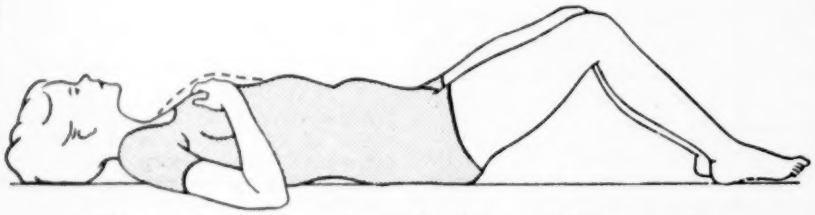


Fig. 11. Panting exercise helpful preparation for labor

- *wide spectrum of antibacterial action*
- *additive and possibly synergistic antibacterial potency*
- *markedly greater safety in systemic sulfonamide therapy*
- *apparent reduction in hypersensitive reactions*

Dram-cillin with Triple Sulfonamides

- *less possibility of development of drug-resistant organisms*

excellent flavor, convenience and economy for the patient.

Each teaspoonful (5 cc.) supplies:

100,000 units buffered penicillin G potassium

.167 Gm. Sulfadiazine

.167 Gm. Sulfamerazine

.167 Gm. *SULFACETIMIDE*—the sulfonamide of choice for the *third* component

- *Supplied:* In 60 cc. bottles containing 1,200,000 units of penicillin G potassium and 6 Gm. of triple sulfonamide mixture.

WHITE LABORATORIES, INC.
Pharmaceutical Manufacturers
Newark 7, N.J.

Basic Science Briefs

Biochemistry

Effect of Carbon Dioxide on Denitrogenation

Incidence of decompression sickness in divers and in aviators may be diminished by administration of carbon dioxide. During the first thirty minutes of denitrogenation, inhalation of a 5% carbon dioxide mixture increases the elimination of nitrogen 20% more than when pure oxygen is breathed. Drs. Rodolfo Margaria and Julius Sendroy, Jr., of the National Naval Medical Center, Bethesda, Md., took gas-meter readings every two minutes of the respiratory expirations of 4 volunteers in a compression chamber. Nitrogen elimination was greatest during the initial thirty-minute period. When subjects were breathing pure oxygen, nitrogen formed 28% of the total; when breathing the 5% carbon dioxide mixture, 34%. Although ventilation changes become much greater as the carbon dioxide tension is increased, the effect is attributed principally to an increased blood flow through watery tissues, brain, and muscles and to a possible decrease in blood flow in the fat tissues.

J. Applied Physiol. 3:295-308, 1950.

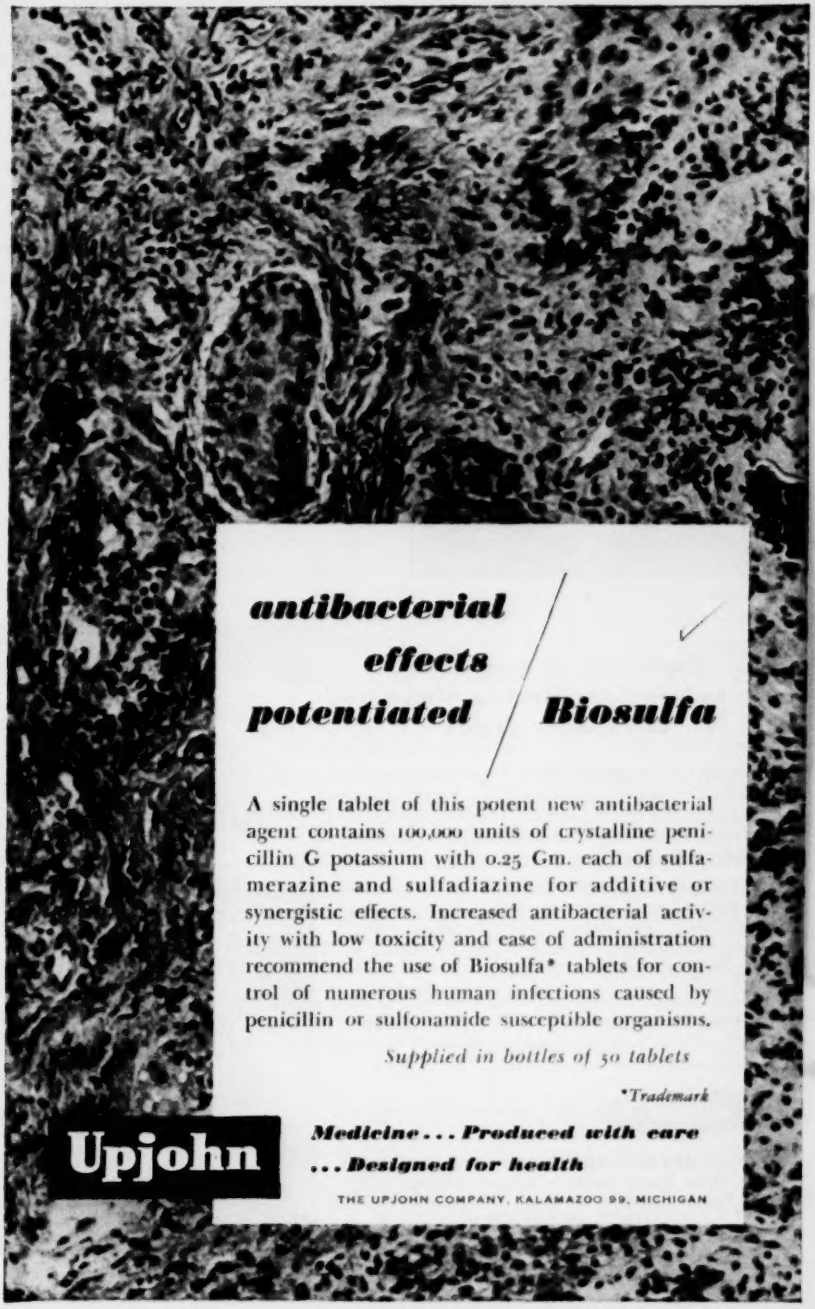
"We make a game out of it."

Hematology

Group Specific Plasma Clots

Size and consistency of plasma clots vary according to blood group, apparently because of a platelet factor. Clot differences were noted by Dr. G. J. Stark and N. Stivel of the Central Blood Transfusion Service, Magen David Adom, Tel-Aviv, Israel, when test sera were prepared by recalcifying plasma with the Clegg and Dible technic. Group O plasma produces the smallest, firmest clot, group B the largest and most translucent, AB and A intermediate forms, and subgroups are also specific. Properties are best seen on the third to seventh day after bleeding. The element responsible is stable from zero to about 108° F., affected by physical reagents, and inactivated by hemolysis and dilution. Since thromboplastin, prothrombin, thrombin, fibrinogen, and isoagglutinins seem unrelated to clot groups, a platelet factor may be inferred.

Blood 5:1150-1155, 1950.


antibacterial
effects
potentiated
Biosulfa
A single tablet of this potent new antibacterial agent contains 100,000 units of crystalline penicillin G potassium with 0.25 Gm. each of sulfamerazine and sulfadiazine for additive or synergistic effects. Increased antibacterial activity with low toxicity and ease of administration recommend the use of Biosulfa* tablets for control of numerous human infections caused by penicillin or sulfonamide susceptible organisms.
Supplied in bottles of 50 tablets
*Trademark
Upjohn
Medicine . . . Produced with care
. . . Designed for health
THE UPJOHN COMPANY, KALAMAZOO 99, MICHIGAN

Physiology

Relation of Performance to Body Temperatures

Diurnal variation in alertness is associated with the establishment and maintenance of a fairly stable daily body temperature curve. Immediately upon getting up in the morning, performance is about as poor as before going to bed the previous night. During the day, alertness gradually increases, with a peak or plateau in the middle of the waking period, followed by a gradual decline to a bedtime low. Drs. Nathaniel Kleitman and Dudley P. Jackson of the Naval Medical Research Institute, Bethesda, Md., believe that alertness and efficiency may be estimated as effectively by reading the body temperatures at different hours as by employing time-consuming performance tests. For the study, 9 Navy recruits were assigned different routines, and tested for reaction times, color naming, and Link Trainer operation. In general, the higher the body temperature, the better the performance.

J. Applied Physiol. 3:309-328, 1950.

in Coryza and Sinusitis... Bacitracin-Nasal

CSC

The combined use of a decongestant and bacitracin provides more than symptomatic value in the local treatment of many upper respiratory infections.[1,2] This approach not only improves nasal ventilation, but also aids in reducing the period of infection since many pathogens found in the nose and nasal sinuses are bacitracin-sensitive. Because of the low index of allergenicity of bacitracin, this antibiotic rarely leads to adverse local reactions on topical application.

Bacitracin-Nasal-C.S.C.—containing 250 units of bacitracin per cc. and 0.25% desoxyephedrine in a rose-scented, approximately isotonic aqueous solution—is a practical and convenient means of instituting intranasal bacitracin therapy. It is non-irritant and well tolerated, and its pleasant scent is acceptable to all patients. Bacitracin-Nasal-C.S.C. is indicated in the treatment of acute and subacute sinusitis, and in coryza when sinus involvement develops.

Bacitracin-Nasal-C.S.C. is supplied dry in 15 cc. bottles with accompanying dropper. It is reconstituted by the pharmacist just before being dispensed.

REFERENCES

1. Prigal, S. J.: Bacteriologic and Epidemiologic Approach to the Treatment of Respiratory Infections with Aerosols of Specific Antibiotics, Bull. N. Y. Acad. Med. 26:282 (Apr.) 1951.

2. Stovin, J. S.: The Use of Bacitracin in the Treatment of Sinusitis and Related Upper Respiratory Infections, New York Physician 32:14 (July) 1949.

3. Prigal, S. J., and Furman, M. L.: The Use of Bacitracin, a New Antibiotic in Aerosol Form; Preliminary Observations, Ann. Allergy 7:662 (Sept.-Oct.) 1949.

C.S.C. Pharmaceuticals A DIVISION OF
COMMERCIAL SOLVENTS CORPORATION • 17 E. 42nd ST., NEW YORK 17, N. Y.

PRULOSE® COMPLEX

The *dietary approach* for Therapeutic correction of Functional Constipation.

Combining the well-known bulk-producing effect of methylcellulose with the universally accepted laxative properties of prunes, the *natural laxative food*, fortified with an isatin derivative. This activated moist bulk

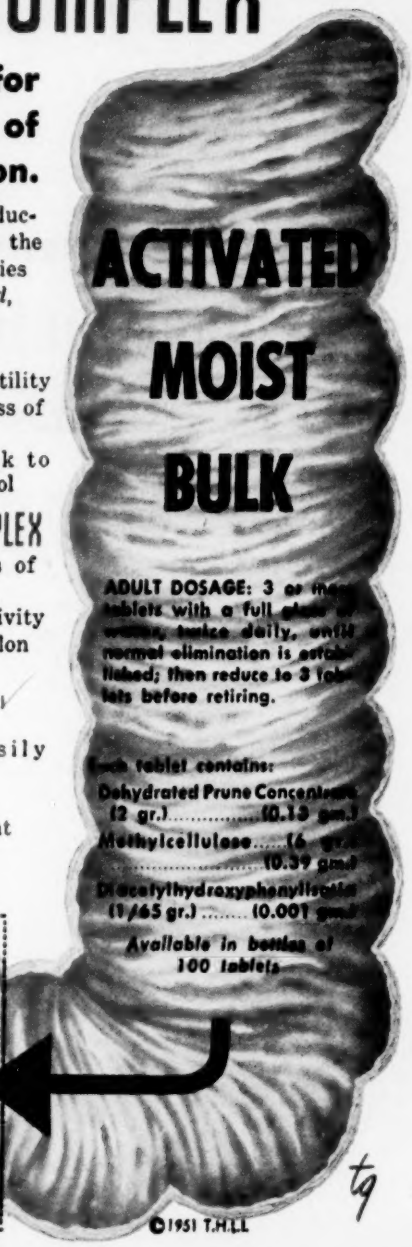
1. activates the colon to normal motility
2. prevents drying out and hardness of the colon contents
3. supplies the necessary bulk to increase the volume of the stool

These actions of PRULOSE COMPLEX

1. promptly relieve the symptoms of functional constipation
2. gently stimulate peristaltic activity
3. institute a return to normal colon function

PRULOSE COMPLEX tablets are:

1. convenient, small and easily swallowed
2. economical—low dosage
3. formulated for maximum patient cooperation



Send for samples and Guidance booklets for your patients

Name .....

Address .....

City ..... Zone .....

State .....

The HARROWER Laboratory, Inc.,
930 Newark Ave., Jersey City 6, N. Y.
261-55-1

Short Reports

Circulation

Ergot for Peripheral Vascular Disease

The hydrogenated alkaloids of ergot not only block sympathetic vasoconstriction but have a central action causing peripheral dilatation. After experience in 118 cases of vascular disease at the University of Bern, Switzerland, Drs. A. Kappert and W. Hadorn recommend the preparation Hydergine, which combines dihydroergocornine, dihydroergocristine, and dihydroergokryptine in equal amounts. Oral therapy produces good results in 65% of functional and 55% of organic cases of vascular disease ranging from slight to moderately severe, and fair results in 25 to 30%. Starting with 6 to 8 drops three times daily, the dose is increased by 1 drop daily, or, with cases of extreme lability, every two or three days, to a limit of 10 to 35 drops. In severe cases, 0.1 to 0.6 mg. is injected subcutaneously or intramuscularly, then combined with oral therapy, producing good effect in 40 to 45% of cases. For extreme conditions, 0.6 mg. is also injected once or twice a day into the main artery of the affected limb. Dosage for a month or two may be sufficient, but oscillating therapy or small maintenance amounts may be required in an occasional case.

Angiology 1:520-529, 1950.

Endocrinology

Antithyroid Drugs

Treatment of thyrotoxicosis may be effectively achieved by two drugs similar in structure to thiouracil, 1-methyl-2-mercaptoimidazole and 1-ethyl-2-mercaptoimidazole. Dr. William H. Beierwaltes of the University of Michigan, Ann Arbor, employed these two drugs in the treatment of 20 patients. Dosage was 10 mg. every four hours during the day for about two months. No toxic reactions were observed. Since the incidence of progressive exophthalmos may be increased by these antithyroid drugs, radioactive iodine is usually given to patients who have malignant exophthalmos.

J. Lab. & Clin. Med. 36:861-865, 1950.

Anemia

Folinic Acid

Small doses of a substance termed citrovorum factor or folinic acid influence megaloblastic anemia as favorably as much larger amounts of folic acid. A synthetic preparation was given to anemic scorbutic monkeys by Dr. Charles D. May and associates in Minneapolis. Bone marrow was free of megaloblasts in forty-eight hours and nearly normal in ten days. Crude folinic acid in doses of 50 and 100 μg. was as prompt and complete in effect as 15 mg. of folic acid.

Proc. Central Soc. Clin. Research 23:71, 1950.

Hematology

Heparin for Burns

Life of dogs fatally burned is prolonged by ordinary therapeutic doses of heparin. Thrombosis and lymph clotting are reduced and the hemoconcentration is decreased, probably through return of fluid and albumin to the circulation by lymphatic channels. Better renal function is shown by lowered nonprotein nitrogen and greater urinary output. Scalded dogs were given anticoagulant therapy by Dr. Parker D. Elrod and associates of Thayer Veterans Administration Hospital and Vanderbilt University, Nashville. The only additional measure was application of a pressure dressing and plaster jacket. Heparinized animals lived seventy-two hours, on the average, while those dogs with fatal burns and not given heparin survived less than thirty-five hours.

Surg., Gynec. & Obst. 92:35-42, 1951.

Honors

Protein Synthesis

Dr. Gladys A. Anslow of Smith College, Northampton, Mass., has received the $500 award given annually by Sigma Delta Epsilon, national women's scientific sorority, to the member who submits the best paper on original research. The winning paper is concerned with the identification of proteins by ultraviolet spectra.

a new important concept in

Anemia Therapy

Based on the most recent clinical advancements in the study of hemopoietic efficiency, HEPTUNA PLUS provides the three basic requirements of dependable antianemia therapy.

- RAPID HEMOGLOBIN REGENERATION
- STIMULATION OF HEMOPOIESIS
- CORRECTION OF ENZYME DYSFUNCTION

Heptuna plus

Each Capsule Contains

FERROUS SULFATE USP	**4.5 gr.**
VITAMIN B12*	**2 mcg.**
FOLIC ACID	**0.85 mg.**
Cobalt	0.1 mg.
Copper	1 mg.
Molybdenum	0.2 mg.
Boron	0.07 mg.
Calcium	66 mg.
Iodine	0.05 mg.
Manganese	0.033 mg.
Magnesium	2 mg.
Phosphorus	51 mg.
Potassium	1.7 mg.
Zinc	0.4 mg.
Vitamin A	5000 USP Units
Vitamin D	500 USP Units
Thiamine HCl	2 mg.
Riboflavin	2 mg.
Pyridoxine HCl	0.1 mg.
Niacinamide	10 mg.
Pantothenate Ca	0.33 mg.

With other B-Complex Factors from Liver

**An oral concentrate assayed microbiologically.*

J. B. ROERIG AND COMPANY ROERIG 536 LAKE SHORE DR. CHICAGO 11, ILLINOIS

Circulation

Smoking and Sympathectomy

The pernicious effect of smoking on thromboangiitis obliterans appears independent of the known vasoconstrictor action of nicotine. Because sympathectomy sometimes fails to give relief, the effect of smoking on sympathectomized limbs was observed by Dr. Samuel I. Rapaport and associates of the Veterans Administration Hospital, Long Beach, and the universities of California and Southern California, Los Angeles. Skin temperature and blood flow were measured in 19 cases after operation for thromboangiitis, arteriosclerosis, or severe vasospasm. Tobacco produced no constriction in any instance, indicating that tension is mediated by sympathetic vasomotor fibers and not by humoral agents such as adrenalin or posterior pituitary hormone.

Circulation 2:850-858, 1950.

Public Health

Alcoholism a Medical Problem

A program to combat alcoholism has been outlined by a World Health Organization committee recently convened in Geneva. The committee's basic recommendation is that the disease should be treated on medical and scientific lines, quite apart from social sanction against the use of alcohol.

Microtherm

(Raytheon Radar Microwave Diathermy)

...the indicated, modern treatment for

high clinical efficiency

extreme ease and speed of application

NO TANGLE WITH TELEVISION

(Raytheon Radar Microtherm employs frequencies way, way above the television wave range. No danger of interference)

TRY IT,

without obligation on your part. Ask your dealer to make arrangements for a free trial in your own office.

Microtherm's many advantages include:

Penetrating energy for deep heating

Desirable temperature ratio between fat and vascular tissue

Effective production of active hyperemia

Desirable relationship between cutaneous and muscle temperature

Controlled application over large or small areas

No tuning — no electrodes — no pads — no shocks or arcs — no contact between patient and directors

NO TELEVISION INTERFERENCE TROUBLES

RAYTHEON

Excellence in Electronics

In a recent paper, one leading authority on physical medicine writes: "Fibrositis of the neck or shoulder not relieved by ordinary measures brings patients to the practitioner's office for relief. After ordinary measures fail in this condition, application of Microtherm offers a superior form of treatment."

Reprints of this paper will be mailed on request.

RAYTHEON MANUFACTURING COMPANY • POWER TUBE DIVISION • WALTHAM 54, MASS.

Military Medicine

Cold Weather Uniforms

A wet-cold field uniform for Army troop wear has been developed by the Quartermaster Corps. The assembly eliminates one garment and utilizes new items which are lighter in weight and yet afford greater protection from the weather than the present uniform. The new clothing is made up of four layers for the upper body including a pajama type of undershirt, wool field shirt, frieze jacket liner, and a new field jacket. For the lower part of the body the uniform is unchanged except that pajama type of drawers are used and wool trousers of olive green shade will replace the present OD serge. The pajama type of underwear is loose fitting to provide warmth and prevent the accumulation of sweat by allowing for ventilation of the body. Tests show that the new components are capable of protecting the soldier from adverse weather in a wider range of temperature than the present standard items.

Public Health

Muscle Dystrophy Fund Drive

A goal of $250,000 to support investigation looking toward a cure for muscular dystrophy has been set by the Muscular Dystrophy Association, Inc. The soliciation will be nationwide. Last year the association collected $64,000 for this purpose.

Treatment

Ascites with Hepatic Cirrhosis

Restriction of dietary sodium may effectively control ascites formation in the majority of patients with cirrhosis of the liver. Dr. William J. Eisenmenger and associates of Rockefeller Institute for Medical Research, New York City, found that even if serum sodium is initially low, restriction of ingested sodium to between 14 and 20 mEq. per day usually controls ascites and is well tolerated by patients. If kidney function is normal, acute symptoms of depletion of sodium occur only after paracenteses or administration of diuretics. A rise in serum sodium and increased urinary sodium indicate decreased production of ascites often long before the associated changes in fluid balance are obvious to the examiner.

J. Clin. Investigation 29:1491-1499, 1950.

Pharmacology

ACTH Effect on Tissues

Oxygen consumption of the tissue in slices of dog adrenal cortex is significantly increased when purified ACTH is added. Dr. Jay Tepperman of New York State University, Syracuse, also finds that the addition of ACTH depresses the ascorbic acid content of the tissue slices of dog adrenal cortex.

Endocrinology 47:384-386, 1950.

Cortone®

Saline Suspension of CORTONE Acetate

(1 cc.=25 mg.) vials, 20 cc.

Tablets— CORTONE Acetate

(25 mg. each) bottles, 40 tablets

Clinical studies have demonstrated that the therapeutic activity of Cortone* is similar whether administered parenterally or orally. Dosage requirements are approximately the same, and the two routes of administration may be used interchangeably or additively at any time during treatment.

Although the manufacture of Cortone—probably the most intricate and lengthy synthesis ever undertaken—has imposed unprecedented difficulties, every effort is being made to increase production and, in the meantime, to achieve an equitable national distribution of this vital drug.

Literature on Request

Among the conditions in which Cortone has produced striking clinical improvement are:

RHEUMATOID ARTHRITIS and Related Rheumatic Diseases

ACUTE RHEUMATIC FEVER

ALLERGIC DISORDERS, including Bronchial Asthma

INFLAMMATORY EYE DISEASES

SKIN DISORDERS, notably Atopic Dermatitis, Psoriasis, Exfoliative Dermatitis, including cases secondary to drug reactions, and Pemphigus

LUPUS ERYTHEMATOSUS (Early)

ADDISON'S DISEASE

Key to a New Era in Medical Science

Cortone®

ACETATE

(CORTISONE Acetate Merck)

(11-Dehydro-17-hydroxycorticosterone-21-acetate)

**CORTONE is the registered trade-mark of Merck & Co., Inc. for its brand of cortisone.*

MERCK & CO., INC.

Manufacturing Chemists

RAHWAY, NEW JERSEY

"As a theater manager, Mr. Wilson, you'll be interested to know that your wife's x-ray showed a preview of two coming attractions."

Life's Weary Moments

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The March 15 winner is

O. W. Thomsen, M.D.
Beverly Hills, Calif.

Mail your caption to
The Cartoon Editor
Caption Contest
No. 1
MODERN MEDICINE
84 South 10th St.
Minneapolis 3, Minn.

In the Common Cold

Prompt Symptomatic Relief

DIAPHORETIC
ANTIPYRETIC
ANALGESIC

Once the common cold becomes established, therapy is aimed at alleviating symptoms and promoting patient comfort. For this purpose, Dasin produces prompt relief through its analgesic, antipyretic, and diaphoretic actions.

Troublesome rhinorrhea is mitigated by the action of atropine, while the typical muscular aches and pains respond to Dover powder, acetophenetidin, and aspirin. This multiple approach quickly makes for subjective comfort, minimizing the demands of the patient's vitality.

The dose of Dasin is 1 or 2 capsules every 2 hours for 3 doses, then 1 capsule every 3 hours. Supplied in bottles of 100 and 1000.

THE S. E. MASSENGILL COMPANY
Bristol, Tenn.-Va.
NEW YORK · SAN FRANCISCO · KANSAS CITY

Each Dasin capsule contains:

Dover powder	½ gr.
Acetophenetidin	1½ gr.
Atropine Sulfate	1/500 gr.
Aspirin	2 gr.
Camphor	¼ gr.
Caffeine	⅛ gr.

SE Mco

DASIN
CAPSULES

Radiology

Prevention of X-Irradiation Disease

Early massive cross transfusion exerts a protective effect in dogs exposed to lethal doses of x-rays. Dr. Peter F. Salisbury and associates at the Cedars of Lebanon Hospital, Los Angeles, exposed dogs to a standard single total body x-irradiation of 450 r. After irradiation, 84% of the dogs not receiving transfusion died, but only one-third of the cross-transfused dogs. Depression of hemopoietic tissues, widespread hemorrhagic manifestations, and evidence of sepsis were common to all the animals that died. Surviving transfused animals, however, were moderately active, ate well, and had no diarrhea or evidence of sepsis or hemorrhage. Peripheral blood studies showed a depression of total leukocytes to 400 cells per millimeter in the untreated group, whereas the transfused dogs had a depression to only 1,800 cells. Reticulocyte response was 0.2% in the postirradiation period for the untreated animals; for the cross-transfused dogs, 1 to 2%.

Science 113:6-7, 1951.

Vascular Dynamics

Ganglionic Blocking Agent

Hexamethonium may be used in the evaluation of the sympathetic vasoconstrictor component in cases of peripheral vascular disease as well as in the treatment of acute peripheral vascular disorders associated with neurogenic vasospasm. When administered in doses of 50 mg. intravenously, the drug inhibits or abolishes sympathetic vasopressor reflexes. The cold pressor response is inhibited as are the digital reflex vasoconstrictor responses to noxious stimuli. Duration of the action is one to two hours, report Drs. Frank A. Finnerty, Jr., and Edward D. Freis of Georgetown University, Washington, D.C. The digital skin temperature rises and is accompanied by simultaneous increases in blood flow and pulse volume. Reduction in supine arterial pressure is frequently slight in healthy persons, but is variable in hypertensive patients and is sometimes pronounced. Occasional severe hypertensive reactions may be prevented or treated by slight elevation of the foot of the bed.

Circulation 2:828-836, 1950.

appetite must be controlled

"The greatest problem in preventive medicine in the United States today is obesity."[1] And today it is well-known that *"The only way to counteract obesity...is by a restriction of food intake."*[2]

'Dexedrine' Sulfate controls appetite, making it easy for the patient to avoid overeating and thus to lose weight safely without the use (and risk) of such potentially dangerous drugs as thyroid. In weight reduction 'Dexedrine' *"is the drug of choice because of its effectiveness and the low incidence of undesirable side effects."*[1]

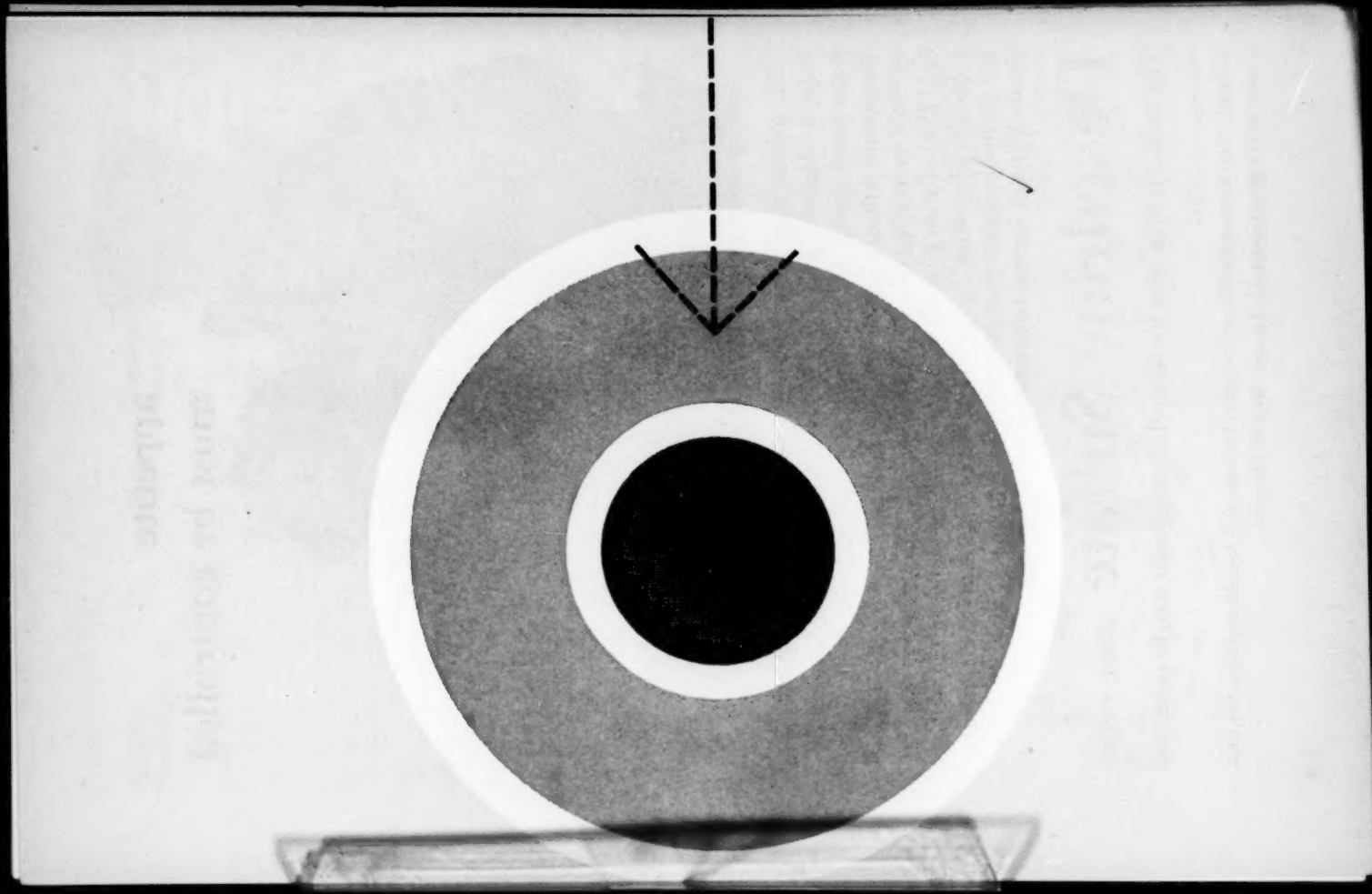
Smith, Kline & French Laboratories • Philadelphia

Dexedrine* Sulfate tablets • elixir

The most effective drug for control of appetite in weight reduction

*T.M. Reg. U.S. Pat. Off.

1. Walker, W.J.: Obesity as a Problem in Preventive Medicine, U.S. Armed Forces M.J. 1:393, 1950.
2. John, H.J.: Dietary Invalidism. Ann. Int. Med. 32:595, 1950.



Radiology

Anoxia Protects from Radiation Injury

Extreme anoxic anoxia maintained during short periods of lethal roentgen irradiation is highly protective. Rats were placed in chambers containing 5% oxygen and 95% nitrogen by Dr. Andrew H. Dowdy and associates of the University of California, Los Angeles, for eight-minute total body exposure to roentgen rays. The dose fatal to 50% in thirty days was 1,200 to 1,400 r, in contrast to about 600 r for rats given 20% oxygen in a similar test. Since histotoxic anoxia induced by injection of sodium cyanide had no beneficial effect, radiochemical reactions involving free oxygen are apparently an indispensable factor in radiation injury.

Radiology 55:879-885, 1950.

"I want to get my memoirs written while I'm young, before my practice gets too heavy."

Endocrinology

Adrenal Hyperplasia

Excessive secretion of androgens is suppressed by cortisone. Dr. Lawson Wilkins and associates of Johns Hopkins University, Baltimore, gave cortisone in doses of 100 mg. daily for fifteen days to a patient with adrenal hyperplasia. The urinary excretion of 17-ketosteroids and estroids was suppressed for eleven days after treatment was stopped. The urinary output of 11-oxysteroids was suppressed during the first ten days of therapy but rose afterward, because of the excretion of a portion of the cortisone.

Bull. Johns Hopkins Hosp. 86:249-252, 1950.

Ophthalmology

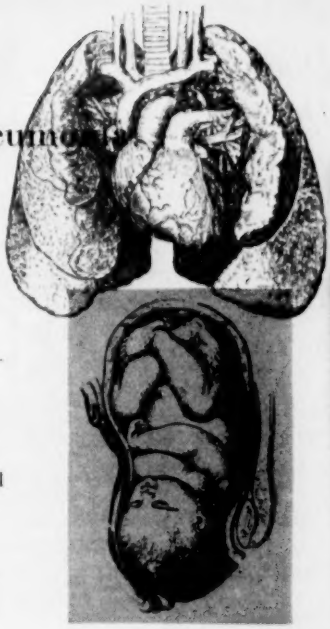
Orbital Splint

Diplopia and enophthalmos from depressed healed fractures of the orbital floor and rim can be corrected surgically by insertion of a jackscrew support in the maxillary sinus. The rigid splint may also be used for recent breaks. Drs. D. H. Anthony and D. F. Fisher of Memphis designed a four-piece set with extra parts to fit a sinus of any dimensions. Included are 2 jacks, large and small, screws of 3 lengths, 2 elevating plates, and 2 angle wrenches. Made of noncorrosive Smo 316 stainless steel, the device may be left in place for three months or permanently, if desired. For insertion, a canine fossa is incised and the anterior sinus wall removed. Drainage is carried out through a permanent opening into the inferior meatus.

Tr. Am. Acad. Ophth. 379-380, 1950.

"very prompt response"
in a pregnant patient
with pneumococcic pneumonia

Case report abstracted from:
Pratt, P. T.: Nebraska State M. J. 35:294 (Sept.) 1950.



F. B., female, age 27

History:

patient 6 months pregnant; severe chill, high fever, severe cough with blood-tinged mucus; severe left lateral chest pain. Type VIII pneumococcus. Fetal heart rate was 188 per minute.

Therapy:

Terramycin by mouth. 2 Gm. daily in divided doses q. 6 h. for 2 days; 1 Gm. daily in divided doses q. 6 h. for 4 days.

Result:

". . . very prompt response. . . . Both maternal and fetal distress were relieved approximately 20 hours after therapy was started."

CRYSTALLINE

Terramycin

HYDROCHLORIDE

Clinical findings covering a wide range of bacterial and rickettsial as well as several protozoan infections indicate that:

1. *Terramycin may be highly effective even when other antibiotics fail.*
2. *Terramycin may be well tolerated even when other antibiotics are not.*

Supplied: 250 mg. capsules, bottles of 16 and 100;
100 mg. capsules, bottles of 25 and 100;
50 mg. capsules, bottles of 25 and 100.

Antibiotic Division **Pfizer** CHAS. PFIZER & CO., INC.
Brooklyn 6, New York

Doctor to Doctor

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The Mar. 15 winner is

D. E. Compere, M.D.
Fort Worth

Mail your caption to
The Cartoon Editor
Caption Contest
No. 2
MODERN MEDICINE
84 South 10th St.
Minneapolis 3, Minn.

"Mrs. Jones says that her intractable hiccups could not be caused by a spasm of her diaphragm because she hasn't used her diaphragm for a year or more."

GRATIFYING IMPROVEMENT IN ACNE, KELOIDS, WITH NEWLY ISOLATED LIVER FRACTION

IN ACNE

reduces papules, pustules, comedones[1,2,3,4] • modifies unsightly scarred areas[1]

IN KELOIDS

reduces size of keloids[4] • inhibits regrowth after surgical removal[5]

KUTAPRESSIN* restores normal skin tone in acne—by constricting capillaries, decreasing capillary volume, and increasing the rate of blood flow through affected tissues.[1,4] This eliminates the passive hyperemia arising from local stasis of blood and tissue fluids, and restores the skin's resistance to secondary infection.

In keloids, constriction of capillaries and reduction of their permeability prevents flow of blood serum into subcutaneous tissues, thus decreasing the distention of the skin and the accompanying inflammation.[4,6] Administration of **KUTAPRESSIN** before, during, and after surgical removal of keloids decreases loss of blood serum into the site of scar formation and inhibits regrowth.[5]

REFERENCES: 1. Marshall, W.: J. M. A. Alabama 13: 255 (1941). 2. Lichtenstein, M. R., and Stillians, A. W.: Arch. Dermat. & Syph. 45: 959 (1942). 3. Stillians, A. W.: Mississippi Valley M. J. 64: 135 (1942). 4. Marshall, W., and Schadeberg, W.: Wisconsin M. J. 49: 369 (1950). 5. Marshall, W.: Paper read before Midwestern Section of the American Federation for Clinical Research, November 2, 1950.

Available in 10-cc. multiple-dose vials through your usual source of supply.

Kremers • Urban Company, MILWAUKEE 1, WISCONSIN

Pharmaceutical Chemists Since 1894

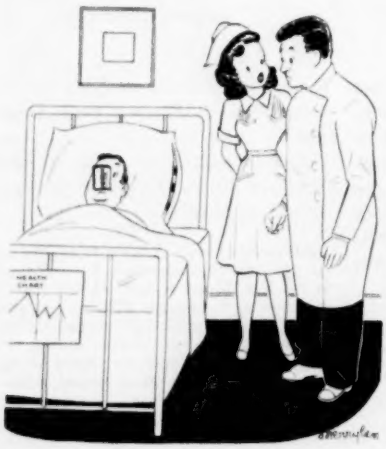
*Trademark of Kremers-Urban Co.

Endocrinology

I^{131} Diagnosis of Hyperthyroidism

Actual secretion of thyroid hormone into blood after a dose of radioactive iodine is a more accurate measure of hyperthyroidism than fixation of iodine by the gland. An improved technic was adopted by Drs. Solomon Silver and Mack H. Fieber at Mount Sinai Hospital, New York City, because of the overlap between normal and abnormal values with a Geiger-Müller gland count or test of urinary iodine excretion. Carrier-free I^{131} is injected intramuscularly in a dose of 100 microcuries, and blood is drawn at regular intervals. To each sample is added 1 mg. of potassium iodide and a drop of 10% sodium hydroxide, then 1 cc. of the whole blood or plasma is pipetted into a planchette, dried, and counted in a Q-gas counter. Forty-eight hours after injection, counts of 24 euthyroid subjects averaged 1.4 per cubic centimeter of plasma, with a range of 0.4 to 1.8. Counts of 30 hyperthyroid patients were 5.6 to 83.4, and the mean 22.4. To exclude high counts due to poor renal function, the protein-bound fraction is measured by precipitation of plasma with trichloracetic acid and the usual technic of counting. When the gland is normal values are not elevated.

Proc. Soc. Exper. Biol. & Med. 75:570-573, 1950.



"I just can't read those little thermometers."

Immunology

Poliomyelitis Vaccination

Considerable immunity to Lansing poliomyelitis is conferred in monkeys for at least a year by vaccination with the active virus. The level of neutralizing antibody in serum was observed for about seventeen months in 3 rhesus monkeys by Dr. Isabel Morgan Mountain at Johns Hopkins University, Baltimore. After a course of intramuscular injections, a large intracerebral inoculation of the same viral strain was given. The effects were counteracted by circulating antibody. Some time later an additional vaccination was given, and blood was sampled every two months. Antibody concentration was excellent at first, fell gradually for eight months, then remained moderately effective for four months. After an active booster dose at the start of the second year, titer again rose to optimum range and slowly receded. The immunizing procedure is too risky for human use.

Proc. Soc. Exper. Biol. & Med. 75:305-308, 1950.

they deserve the best . .

Implicit in a happy healthy childhood is maximal nutrition—and one of the essential dietetic guideposts to vigorous adulthood is adequate vitamin C[1,2,3] (¼-4 oz. for infants up to 1 year;[10,11] 4-8 oz. for older children).[4] Fortunately, most every youngster likes the taste of Florida orange juice and the "lift" its easily assimilable fruit sugars* provide.[6] It is well-tolerated and virtually non-allergenic.[5] And, under modern techniques of processing and storage—it is possible for citrus fruits and juices (whether fresh, canned or frozen) to *retain their ascorbic acid content,*[8,9] *and their pleasing flavor,*[7] *in very high degree and over long periods.*

FLORIDA CITRUS COMMISSION • LAKELAND, FLORIDA

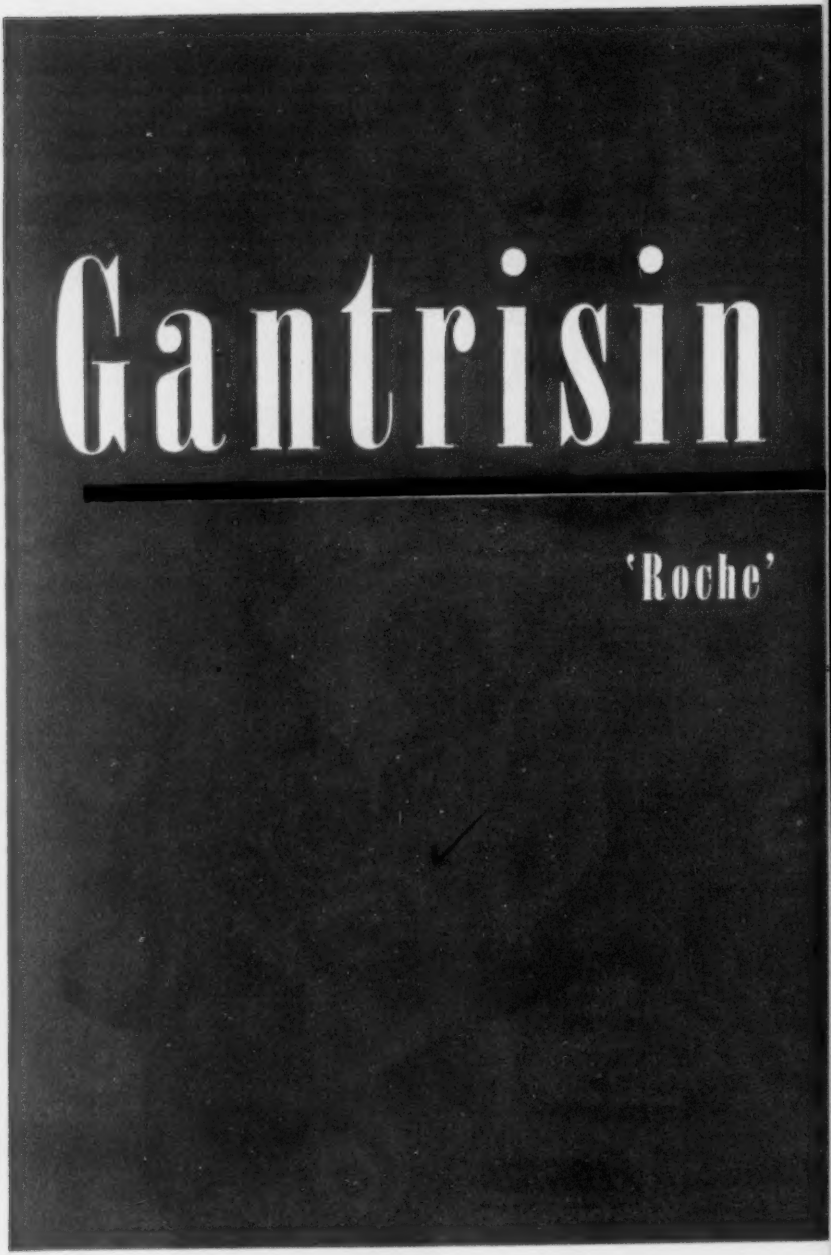
Citrus fruits—among the richest known sources of Vitamin C—also contain vitamins A and B, readily assimilable natural fruit sugars, and other factors, such as iron, calcium, citrates and citric acid.

. . . plenty of citrus fruit

References

1. Clinical Nutrition: ed. by H. Jolliffe et al., Hoeber, 1950.
2. Hauke, M. T.: Diet and Dental Health, Chicago Univ. Press, 1937.
3. Jeans, P. C.: J.A.M.A., 142:800, 1950.
4. Joslin, C. L. and Bradley, J. E.: Personal communication.
5. Krehl, W. A. and Cowgill, G. R.: Fed Research, 10:179, 1950.
6. McLester, J. S.: Nutrition and Diet in Health and Disease, Saunders, Phila., 4th ed., 1949.
7. Moore, E. L. et al.: J. Home Econ., 37:390, 1945.
8. Kay, W. R. and Russell, H. E.: Food Industries, 20:1764, 1948.
9. Sherman, H. C.: Chemistry of Food and Nutrition, Macmillan, 7th ed., 1948.
10. Silverman, A. C.: New York J. Med., 47:1897, 1947.
11. Sherman, S. S.: J. Pediat., 31:516, 1947.

FLORIDA
Oranges • Grapefruit
Tangerines


Gantrisin
'Roche'

antibacterial action plus...

■ **greater solubility**

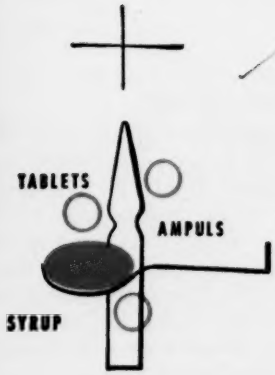
Gantrisin is a sulfonamide so soluble that there is no danger of renal blocking and no need for alkalinization.

■ **higher blood level**

Gantrisin not only produces a higher blood level but also provides a wider antibacterial spectrum.

■ **economy**

Gantrisin is far more economical than antibiotics and triple sulfonamides.



■ **less sensitization**

Gantrisin is a single drug—not a mixture of several sulfonamides—so that there is less likelihood of sensitization.

GANTRISIN®—brand of sulfisoxazole
(3,4-dimethyl-5-sulfanilamido-isoxazole)

HOFFMANN-LA ROCHE INC.

Roche Park • Nutley 10 • New Jersey

Surgery

Skin Marking Ink

Incision sites on the skin for complicated reconstructive procedures are best marked with an ink that will not rub off with soap and water or alcohol but that is easily soluble in benzine or ether. Drs. Joseph A. Tamerin and Leo A. Bornstein of Harlem Hospital, New York City, find that ink with a light oil distillate base containing gums, waxes, and resins used in pharmaceutic manufacture fulfills these criteria. For best results the skin should be dry and free of epithelial debris. The skin markings are not removed by soap and water cleansing followed by tinctures of metaphen or zephiran before operation. Cultures of the ink have been sterile, and no case of skin sensitivity has occurred in hundreds of cases in the past two years.

Plast. & Reconstruct. Surg. 6:475-478, 1950.

Endocrinology

ACTH and Allergy

Allergic encephalomyelitis may be modified or entirely forestalled by adequate doses of ACTH. The reaction induced in guinea pigs by a single injection of rabbit brain emulsion is inhibited by ACTH, find Dr. Arden W. Moyer and associates of Pearl River, N.Y., and the New York State Department of Mental Hygiene, Letchworth Village. Symptoms and significant brain lesions failed to appear when a total of 65 mg. of hormone was injected in 5-mg. daily doses started the day after inoculation. Reactions were only slight to moderate if 10 mg. was given the first two days but severe if therapy was delayed nine days.

Proc. Soc. Exper. Biol. & Med. 75:387-390, 1950.

FOR YOUR PATIENT

with Bronchial Asthma, Hay Fever, Urticaria

LUASMIN

Brewer

CAPSULES
PLAIN
(for prompt action)

TABLETS
ENTERIC-COATED
(for delayed action)

One capsule and one tablet, taken at bedtime will provide almost all patients with eight hours relief and sleep. The relief can be sustained by using the capsules during the day at 4 hour intervals as required.

Each capsule and enteric-coated tablet contains:

Theophylline Sodium Acetate	(3 gr.) 0.2 Gms.
Ephedrine Sulfate	(½ gr.) 30 Mg.
Phenobarbital Sodium	(½ gr.) 30 Mg.

Capsules and tablets in half the above potency available for children and mild cases in adults.

For samples—just send your ℞ blank marked MM-3.

Brewer EST. 1852

BREWER & COMPANY, INC.
WORCESTER 8, MASSACHUSETTS U.S.A.

Current Books & Pamphlets

This catalogue is compiled from all available sources, American and foreign, to insure a complete listing of the month's releases.

Medicine

DIFFERENTIAL DIAGNOSIS OF INTERNAL DISEASES: CLINICAL ANALYSIS AND SYNTHESIS OF SYMPTOMS AND SIGNS *by* Julius Bauer. 866 pp., ill. Grune & Stratton, New York City. $12

A SYLLABUS OF LABORATORY EXAMINATIONS IN CLINICAL DIAGNOSIS: CRITICAL EVALUATION OF LABORATORY PROCEDURES IN THE STUDY OF THE PATIENT *edited by* Thomas Hale Ham. 496 pp. Harvard University Press, Cambridge, Mass. $5

BRONCHOESOPHAGOLOGY *by* Chevalier Jackson *and* Chevalier L. Jackson. 366 pp., ill. W. B. Saunders Co., Philadelphia. $12.50

EATING TOGETHER: A COOKBOOK FOR DIABETICS AND THEIR FAMILIES *by* Camille Macaulay. 419 pp. Farrar, Straus & Co., New York City. $3.50

INTRODUCTION À LA MÉDICINE INTERNE *by* Jacques Roskam. 2 vols., 835 pp., ill. Editions Desoer, Liège, Belgium. 3,000 fr.

Otolaryngology

YOUR DEAF CHILD: A GUIDE FOR PARENTS *by* Herbert R. Myklebust. 132 pp., ill. Charles C Thomas, Springfield, Ill. $2.50

HALS-NASEN-UND OHRENHEILKUNDE *by* Paul Kaiser. 6th ed. 252 pp., ill. Urban & Schwarzenberg, Munich. 12 M.

Orthopedics

SURGERY OF THE SHOULDER *by* Anthony F. De Palma. 438 pp., ill. J. B. Lippincott Co., Philadelphia. $17.50

ORTHOPAEDIC SURGERY *by* Walter Mercer. 4th ed. 1,016 pp. Edward Arnold & Co., London. 50s.; Williams & Wilkins Co., Baltimore. $10

Cancer

FORM-UND WACHSTUMSGESETZE DRÜSENBILDENDER KARZINOME *by* Richard Böhmig. 105 pp., ill. Georg Thieme, Stuttgart. 14 M.

THE CANCER PATIENT: A NEW CHEMOTHERAPY IN ADVANCED CASES *by* B. A. Meyer *and* I. S. Orgel. 87 pp. J. & A. Churchill, London. 7s. 6d.

Gynecology & Obstetrics

GEBURTSHILFLICH-GYNÄKOLOGISCHE PROPÄDEUTIK UND UNTERSUCHUNGSLEHRE *by* G. Döderlein *and* G. Mestwerdt. 245 pp., ill. Johann Ambrosius Barth, Leipzig. 10.8 DM.

PROGRESS IN GYNECOLOGY, VOL. II, 1950 *edited by* Joe V. Meigs *and* Somers H. Sturgis. 821 pp., ill. Grune & Stratton, New York City. $9.50

THE BIRTH OF A CHILD: OBSTETRIC PROCEDURE IN NORMAL CHILDBIRTH FOR THOSE WHO ATTEND WOMEN IN LABOR *by* Grantly D. Read. 114 pp. Vanguard Press, New York City. $1.50

THE 1950 YEAR BOOK OF OBSTETRICS AND GYNECOLOGY *edited by* J. P. Greenhill. 570 pp., ill. Year Book Publishers, Chicago. $5

Anatomy

AIDS TO SURGICAL ANATOMY *by* J. S. Baxter. 3d ed. 203 pp., ill. Baillière, Tindall & Cox, London. 5s.; Williams & Wilkins Co., Baltimore. $1.75

VISUAL ANATOMY: HEAD AND NECK *by* Sydney M. Friedman. 232 pp., ill. Charles C Thomas, Springfield, Ill. $6.50

FUNCTIONAL ANATOMY OF THE VERTEBRATES *by* Daniel P. Quiring. 624 pp., ill. McGraw-Hill Book Co., New York City. $5.50

WHY 8 OUT OF 10 MOTHERS WHO USE CARNATION MILK SAY:

"My doctor recommended it"

THERE ARE *several hundred* different brands of evaporated milk . . . but, for infant feeding, Carnation is the one prescribed by many of America's leading doctors and hospitals. Here are four outstanding reasons why Carnation has won the trust of the medical profession:

1. Carnation Research Has Improved the Raw Milk Supply

For years, champion cattle from Carnation Farm have been distributed to dairy farmers all over the country, thus improving the local milk supply to Carnation plants.

2. Carnation Accepts Only Quality Milk for Processing

Carnation Field Men regularly check herds, sanitary conditions of the farm, and equipment. Milk is rejected if it fails to meet any of Carnation's high standards.

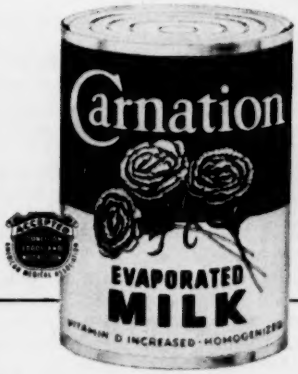
3. Carnation Processes ALL the Milk Sold Under the Carnation Label

From cow to can, Carnation Milk is constantly under Carnation's *own* continuous control. It is processed in Carnation's *own* plants with "prescription accuracy" to insure complete uniformity. Carnation never has—and never will—sell milk processed by another company.

4. Carnation Quality Control Continues Even AFTER the Milk Leaves the Plant

Every can bears a code number...so Carnation representatives can check stocks *after* they're shipped, to be sure mothers and hospitals receive fresh, high-quality milk.

No other evaporated milk goes to greater lengths to protect the doctor's recommendation. No other form of whole milk is safer or more nourishing for babies. So Carnation is the milk you can specify—by name—with confidence.



Don't say "Evaporated Milk"
—say CARNATION
"The Milk Every Doctor Knows"

"from contented cows"

Allergy

HAY-FEVER: A KEY TO THE ALLERGIC DISORDERS *by* John Freeman. 321 pp., ill. William Heinemann Medical Books, London. 42*s*.

Cardiovascular Diseases

CONGENITAL HEART DISEASE *by* James W. Brown. 2d ed. 344 pp. Staples Press, London. 30*s*.

DER MUSKELSTOFFWECHSEL DES HERZENS *by* H. H. Schumann. 144 pp., ill. Dietrich Steinkopf, Darmstadt. 14.50 M.

Psychosomatic Medicine

EMOTIONS AND CLINICAL MEDICINE *by* Stanley Cobb. 243 pp., ill. W. W. Norton Co., New York City. $3

CURRENT TRENDS IN THE RELATION OF PSYCHOLOGY TO MEDICINE *by* Wayne Dennis et al. 189 pp. University of Pittsburgh Press, Pittsburgh. $3.75

YOU'RE HUMAN TOO! *by* Adele Streeseman. 206 pp. Coward-McCann Co., New York City. $3

Histology

METHODS OF TISSUE CULTURE *by* Raymond C. Parker. 2d ed. 294 pp., ill. Paul B. Hoeber, New York City. $7.50

Public Health

HEALTH INSTRUCTION YEARBOOK, VOL. VIII, 1950 *edited by* Oliver E. Byrd. 279 pp., ill. Stanford University Press, Stanford, Calif. $3.50

MODERN SCHOOL HYGIENE *by* Raymond Gamlin. 14th ed. 480 pp., ill. James Nisbet, London. 12*s*. 6*d*.

PUBLIC HEALTH NURSING PRACTICE *by* Ruth B. Freeman. 337 pp. W. B. Saunders Co., Philadelphia. $3.50

TUBERCULOSIS HANDBOOK FOR PUBLIC HEALTH NURSES *by* Jean South. 88 pp. National Tuberculosis Association, New York City. 50c

MEDICAL CARE FOR SEAMEN: THE ORIGIN OF PUBLIC MEDICAL SERVICE IN THE UNITED STATES *by* Robert Straus. 165 pp. Yale University Press, New Haven, Conn. $3.75

THE COMMUNITY AND PUBLIC HEALTH NURSING: A HANDBOOK FOR AND ABOUT BOARDS AND CITIZENS COMMITTEES *by* Edith Wensley. 250 pp. Macmillan Co., New York City. $3.50

A MAJOR RESPONSE

Veratrite, for routine use, is a reliable hypotensive agent without serious side-effects. Circulatory improvement, a gradual fall in blood pressure, and a new sense of well-being can be obtained without complicated dosage schedules or daily dosage adjustments. Economy—a point of importance in long-range therapy—is in favor of Veratrite in the management of the great majority of hypertensive patients.

Supplied: Bottles of 100, 500, 1000 at prescription pharmacies everywhere.

LITERATURE AND SAMPLES ON REQUEST

Each VERATRITE Tabule contains:
Veratrum Viride 3 CRAW UNITS*
Sodium Nitrite . . . . 1 grain
Phenobarbital . . . . . ¼ grain
Beginning Dose: 2 tabules t.i.d., after meals.

*Biologically Standardized for toxicity by the Craw Daphnia Magna Assay.

Veratrite

IRWIN, NEISLER & COMPANY DECATUR, ILLINOIS

PATIENTS . . . *I Have Met*

The editors will pay $1 for each story published. No contributions will be returned. Send your experiences to the Patients I Have Met Editor, MODERN MEDICINE, 84 South Tenth St., Minneapolis 3, Minn.

Time to Leave

It was a busy day at the free baby clinic. The woman sitting before me had a baby on each knee. I had just taken the history of the 11-month-old infant on the left knee and, as I turned to the other, I asked the mother, "And how old is this one?"

"Six months," she replied.

"Do you have any other children?" I asked.

The woman gathered a baby under each arm and was practically outside the door before she answered, "Look, Doctor, if you don't think it odd that I have one child of 11 months and another of 6 months I don't want you to examine my children. I was just holding the younger child while her mother went out on an errand."—T.E.

Indigestion results from trying to fit a square meal into a round stomach.—R.R.

"The doctor told him to watch his stomach!"

No weak spots in these uniformly strong, tissue-thin gloves

B. F. GOODRICH "Miller" brand surgeons' gloves, made by the patented Anode process, are *uniformly* strong. You can always feel secure in the knowledge that your gloves are free of weak spots that might tear or break at a crucial time.

Without sacrificing strength, these single layer gloves are tissue-thin to allow you almost as sensitive a touch as you would have without gloves.

The extra long, constricted wrists, full backs and tapered fingers all add up to your comfort when operating or examining. A full range of accurate sizes assures you the exact fit you need.

These gloves come in three types: surgeons' gloves for operating, short wrist examining gloves and "Special Purpose" gloves for those who develop an allergic dermatitis when wearing ordinary rubber gloves.

Order B. F. Goodrich gloves from your hospital or surgical supply dealer. *The B. F. Goodrich Company, Sundries Division, Akron, Ohio.*

B.F.Goodrich

Surgeons' Gloves

Unconvinced

During my internship I was dispatched on an ambulance call. Upon arrival at the address given, I was ushered into a room full of people standing quietly near a couch upon which the patriarch of the household lay. Obviously life had ceased hours before. Confidently, but gravely, I told the assembled relatives that the old man was dead.

At my announcement the old granny stepped forward, brusquely pushed me aside and said to her kinfolk, "Humpf! Are we going to believe him? He's only an intern."—J.V.M.

A plastic surgeon is a doctor who is always sticking someone else's nose into his business.—R.R.

True Cue

During the Christmas holidays when I was a fourth year medical student, I was taking the history of a new GYN patient. "When did your last menstrual period begin?" I asked.

Before the patient could answer, Christmas carolers struck up outside the window, "It came upon a midnight clear . . ."—W.L.S.

". . . and after lunch my pliers were missing."

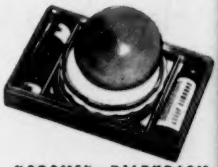
Digging Deep

Recently, upon answering the phone, I was somewhat startled to be asked:

"Is this the right doctor? I want the one who practices geology and obstetrics—K.V.

DOCTOR, IT ALL STARTS WITH THE DIAPHRAGM

When the physician prescribes KOROMEX, his choice has been literally assured . . . of satisfaction and safety to the patient. ➢ ➢ Since 1925, KOROMEX has not only pioneered the way to personal feminine hygiene, but with its scientific development and promotion of sound design and material, has established a formula for safety.



KOROMEX DIAPHRAGM
...AN ACCEPTED STANDARD OF QUALITY

ACTIVE INGREDIENTS: BORIC ACID 2.0% OXYQUINOLIN BENZOATE 0.02% AND PHENYLMERCURIC ACETATE 0.02% IN SUITABLE JELLY OR CREAM BASES

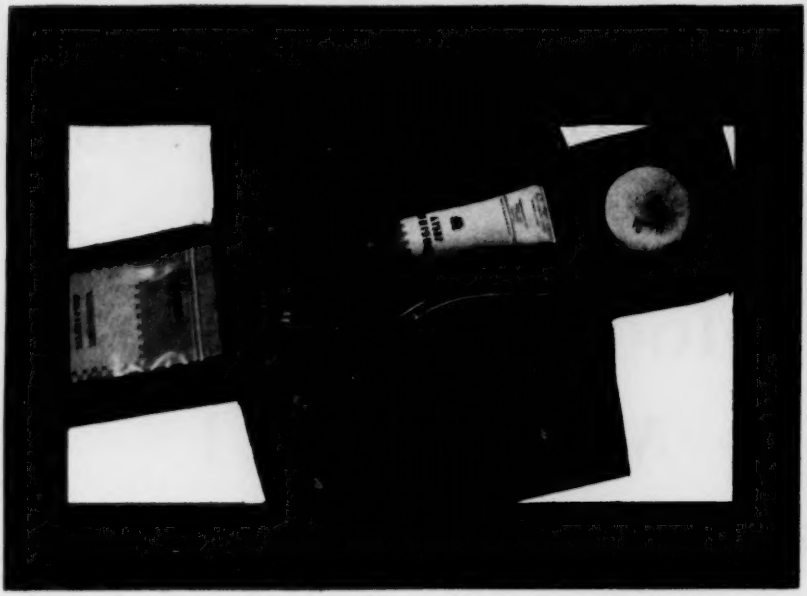
KOROMEX

A CHOICE OF PHYSICIANS

HOLLAND-RANTOS COMPANY, INC. • 145 HUDSON ST., NEW YORK 13, N. Y.

MERLE L. YOUNGS, PRESIDENT

INDEX TO ADVERTISERS



Weisman[1] states that a simple answer to "inadequate contraceptive practices" is the combined use of the vaginal diaphragm and spermatocidal jelly, "which are almost perfect in their contraceptive function." This method is especially desirable because it enables the wife, who bears the greater burden in repeated pregnancies, to maintain control of the procedure.[2]

Toxicologic and clinical studies have established the safety and dependable effectiveness of the "RAMSES"* Vaginal Diaphragm and "RAMSES" Vaginal Jelly.[3]

For the patient's convenience, we suggest prescription of the "RAMSES" "TUK-A-WAY KIT",† which contains a diaphragm and introducer of the specified size and a tube of "RAMSES" Vaginal Jelly‡—all in a colorful, washable plastic kit. The "TUK-A-WAY KIT" is easy to carry or store . . . appealing to fastidious women.

"RAMSES" Gynecological Products are advertised exclusively to the medical profession.

1. Weisman, A. I.: Spermatozoa and Sterility. New York, Paul B. Hoeber, Inc., 1941; p. 257. 2. Clark, Le M.: The Vaginal Diaphragm. St. Louis, The C. V. Mosby Company, 1939, p. 18. 3. Report of a leading fertility and sterility clinic. *The word "RAMSES" is a registered trademark of Julius Schmid, Inc. †The words "TUK-A-WAY KIT" constitute a trademark of Julius Schmid, Inc. ‡ACTIVE INGREDIENTS: Dodecaethyleneglycol Monolaurate 5%; Boric Acid 1%; Alcohol 5%. "RAMSES" Vaginal Jelly is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. The "RAMSES" Vaginal Diaphragm and Diaphragm Introducer are accepted by the Council on Physical Medicine and Rehabilitation of the American Medical Association.

gynecological division

Julius Schmid, Inc.

423 West 55th Street, New York 19, N. Y.

quality first since 1883

Protein "Pick-me-up" in Pregnancy

an appetizing method of supplying the additional protein needed . . .

In pregnancy, especially during the last trimester, a protein intake of at least 85 to 100 Gm. daily has been recommended.*

To supply high protein intake *without bulk* — in a pleasantly palatable food or drink — Essenamine may be incorporated in meat loaves, baked goods, milk, fruit juices. The granules may also be taken as is or with milk, cream and sugar.

Essenamine contains three to five times as much protein as meat.

Essenamine "Pick-me-up" — the following eggnog recipe (just one of many in the Essenamine recipe book) supplies 60.8 Gm. of protein in an appetizing beverage:

Eggs	2	Combine all ingredients and whip in mechanical mixer or with egg beater
Essenamine	4 tablespoonfuls	
Sugar	2 tablespoonfuls	
Vanilla extr.	Few drops	
Milk	2 cups	

Essenamine®

PROTEIN CONCENTRATE FOR ORAL USE

Supplied in three forms:

Essenamine Powder (unflavored),
7½ and 14 oz. glass jars.

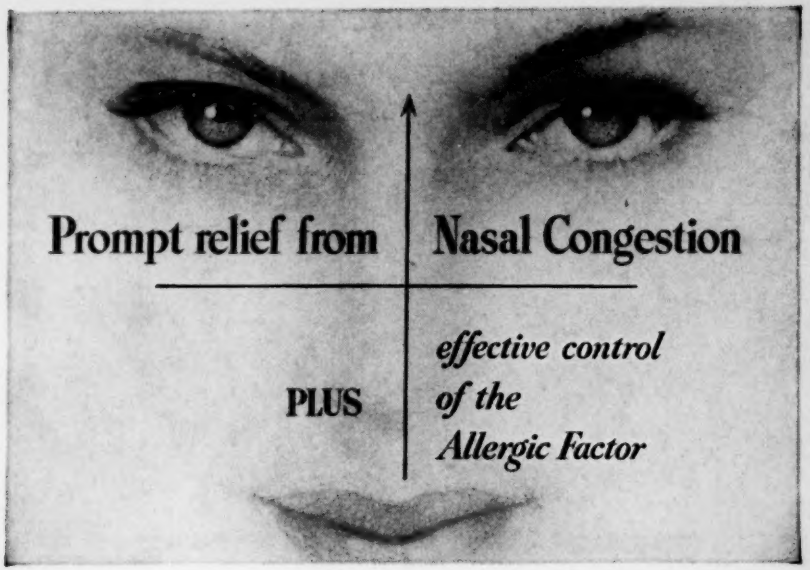
Essenamine Compound Powder (vanillin flavor),
7½ oz. glass jars.

Essenamine Compound Granules (vanillin flavor),
7½ oz. glass jars.

Essenamine, trademark reg. U. S. & Canada

*Guerriero, W.F.: Texas State Jour. Med., 45:274, May, 1949.

Winthrop-Stearns inc.
New York, N. Y. Windsor, Ont.



"Allergy is perhaps the commonest cause of a stuffy nose . . .", according to Dill.[1] Shambaugh[2] states that ". . . 70% of all chronic suppurative sinusitis is on an allergic basis." He emphasizes the importance of controlling the allergic factor in nasal congestion.

Logical therapy for nasal congestion is with this synergistic combination of Antistine, to block the congestive action of histamine, and Privine, to shrink the nasal mucosa. *Dosage:* 2 to 3 drops in each nostril 3 or 4 times daily.

1. Postgrad. Med. 4:413,1948. • 2. M. Rec. & Ann. 42:673, 1948.

Antistine®-Privine,® aqueous solution of Antistine (antazoline) hydrochloride 0.5%, and Privine (naphazoline) hydrochloride 0.025%, in bottles of 1 fl. oz. with dropper.

Ciba PHARMACEUTICAL PRODUCTS, INC.,
SUMMIT, N. J. 2/1632M

Antistine-Privine

Antihistaminic *plus* Vasoconstrictor